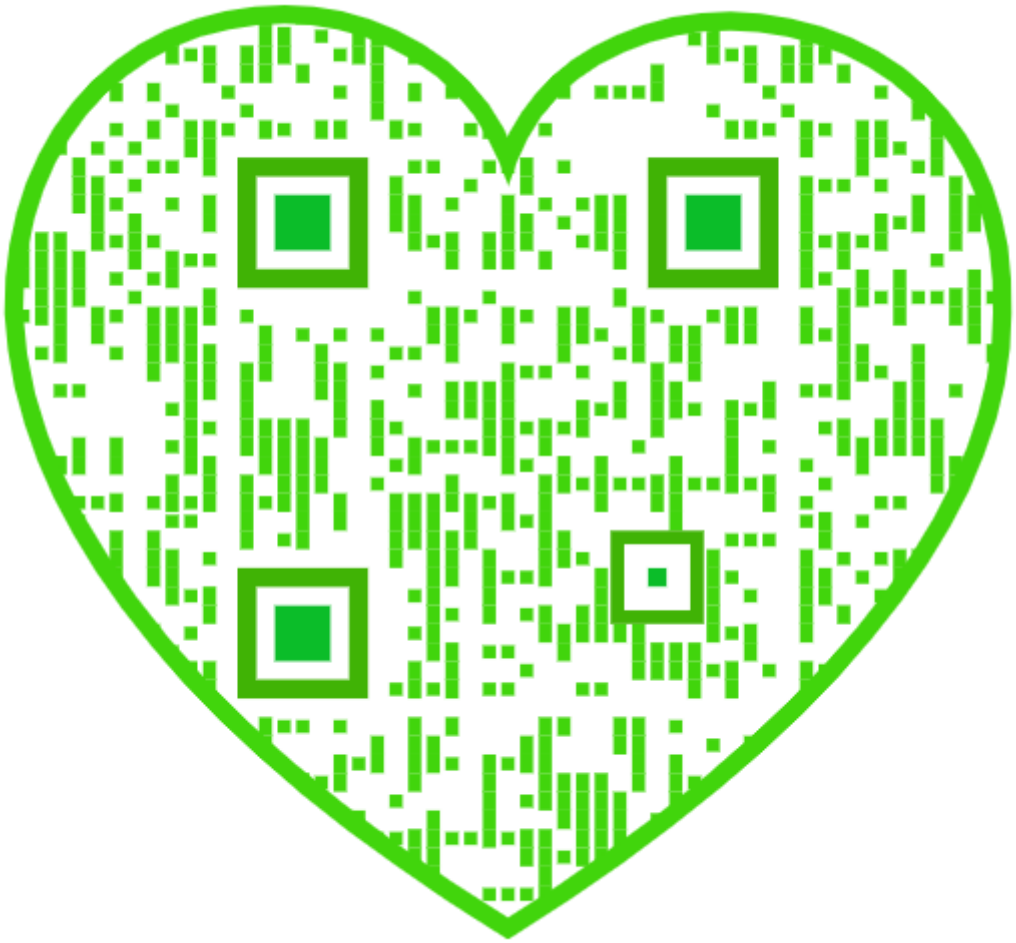
VISUAL GEOGRAPHY OF CALIFORNIA

Herbert Edward Floerchy

CALIFORNIA STATE SERIES



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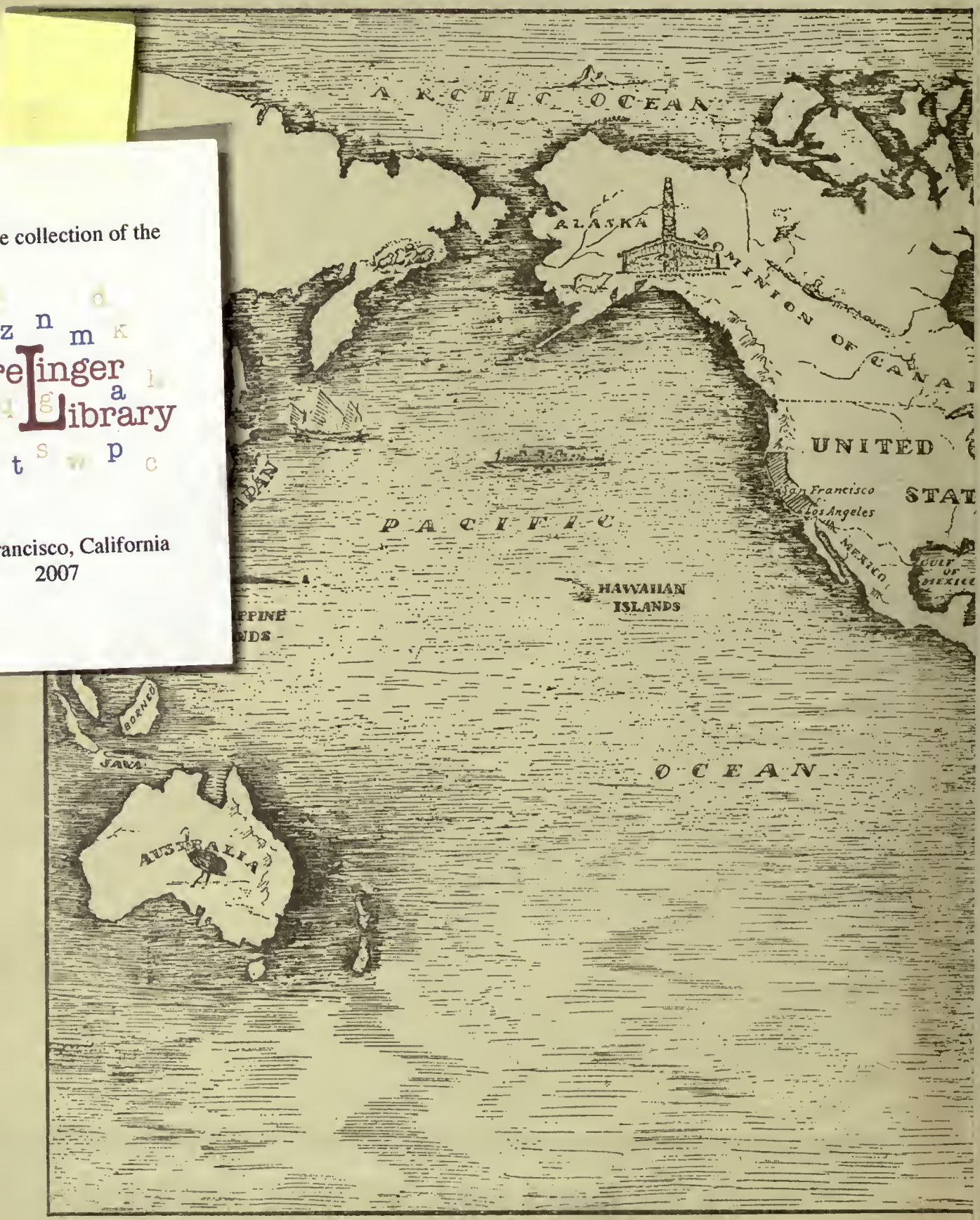

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The State Capitol in Capitol Park, Sacramento

Erected in 1860-1869

The top of the dome is 237 feet above street level. It is located in the center of a park world-famed for its remarkable collection of trees and shrubs.

VISUAL GEOGRAPHY
OF
CALIFORNIA

SHOWING *by* MAPS *and* CHARTS
The HISTORY, PRODUCTS, GENERAL POINTS
And FEATURES OF INTEREST

Also United States Comparisons on State Areas,
Population — Foreign Commerce

HERBERT EDWARD FLOERCKY

CALIFORNIA STATE SERIES

Revised and Adopted by the CALIFORNIA STATE BOARD OF EDUCATION

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PREFACE

Many hardy adventurers have come to California in their search for new lands, and the romantic story of their travels and hardships are matters that every dweller in this state will find of interest. The early discoverers came by way of the sea, but after the discovery of gold all manner ner of men came overland. California's rich underground lakes of oil and the great numbers of persons who were attracted by the lure of acquiring fortunes in the oil fields have added another epoch to the history of this far western state. The climate, too, has been a source of attraction for people from colder parts of the world.

This book attempts to tell some of the most important facts about California and the bearing these have had on the development of the state.

Pictures, maps, charts, and graphs have been freely used in an effort to concentrate much information in a small space. Two types of graphs or charts are used. If the similarity between the circular graphs and a pie is pointed out to the children they will readily grasp the relationship between the slices and the whole and thus between the objects of comparison.

On pages 64 and 66 several maps and photographs of the same area are shown. These provide an excellent opportunity for the child to learn how maps are made.

The author wishes to acknowledge the encouragement so generously given him by Mr. Robert Lane, Assistant Superintendent of the Los Angeles Public Schools. Appreciation is also expressed for the assistance rendered by Miss Mary Murray, Miss Jasmine Britton and Mr. Alfred Lewerenz of the Los Angeles Public Schools. The historical data used in the preparation of this text were checked by Dr. Owen C. Coy of the University of Southern California.

Various chambers of commerce throughout the state and the Southern Pacific Railroad were generous in the loan of photographic material.

The ground plan of an early mission on page 5 was taken from the book, Santa Barbara, by Fr. Zephyrin Engelhardt, O.F.M., with his kind permission. All data used in this book were obtained from official state and government sources only.

HERBERT EDWARD FLOERCKY.

Airview of Los Angeles—City Hall in center.

Looking across San Francisco—Yerba-Buena Island in the background.

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To start our story of California at the beginning we must go back nearly 450 years. To understand how California came to be discovered we must learn something of the voyage of Columbus in 1492. His historic landing just off the coast of America was the beginning of a number of other expeditions that finally led to the discovery of our own west coast 50 years later.

In the front of this book is a map of the world. Like most of the maps that we see the land and water looks flat. The circle maps below show the world more as it really is. We must imagine that we are seeing it from a great distance. If we were on the moon our own great country would look as small as it does on these maps.

Turn to the map in the front of this book. Look carefully at the land marked Europe and the country in the lower end of it marked Spain.

The First People Lived Beyond the Sea

Everything must have a beginning. Human life, people, started in the countries beyond the Atlantic. They knew nothing of the land called America and the Indians that lived in America knew nothing of them. Even the name America was unknown.

Europe was another large body of land like America. The people of Europe were trading goods with India. It was a far off land and they had to travel many miles over land and sea to reach it. Nearly every one thought that the earth was flat. The tradesmen always traveled toward the east.

Columbus Comes to America

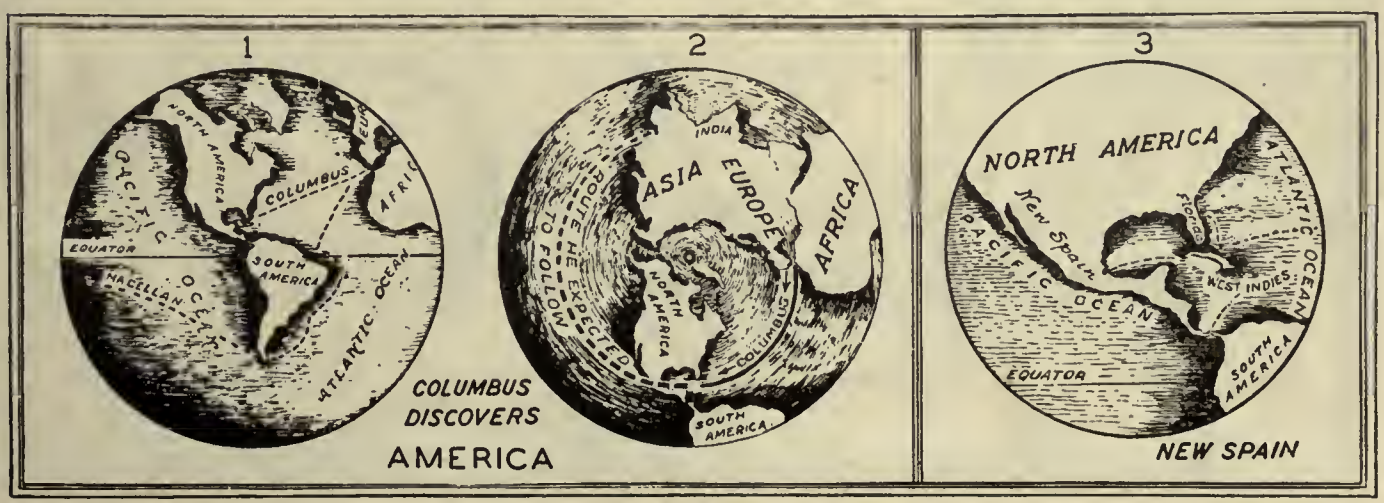
Columbus believed that the world was round. He set sail from Spain toward the west hoping to find a shorter way to India.

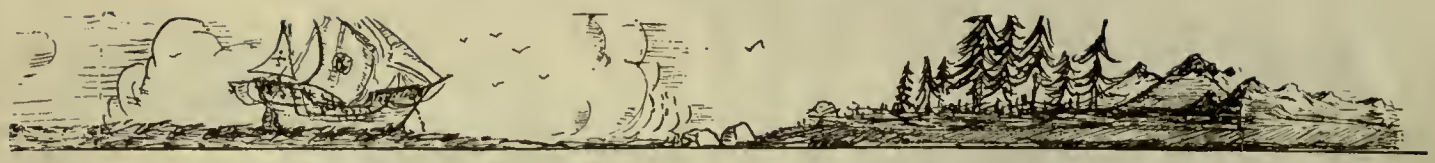
Maps 1 and 2 show the path that was taken across the Atlantic Ocean by Columbus. The heavy black line tells how far he sailed. The dotted line on Map 2 shows where he would have landed if his way had not been stopped by the islands of North America. It is said that when Columbus died, he still thought that he had found a new passage to India. The dotted line around South America shows how Magellan did make the trip around the world a short time later.

Map 3 is a larger drawing of the islands and the mainland of America. It is the part that was first settled by Columbus and his followers. The dotted lines show where the bravest of these Spaniards sailed. New Spain was discovered by the explorer who went toward the west.

On the next page we take up the discoveries of these men. It took 50 years from the time that Columbus landed before they found California.

The letter C played an important part in the early life of California. Columbus, Cortez, Cabrillo were the three brave explorers that had the most to do with its discovery.





The Spaniards Explore America

Now let us see what steps led to the arrival of the first white man in California.

Below we have a map of New Spain as it looked to the people of the 16th century. To refresh our memory as to the location of the island on which Columbus first landed, a small drawing of the West Indies is shown, in the lower corner. With these islands as a starting place the Spaniards sailed forth to find new lands.

Twenty-one years after Columbus landed, a Spaniard named Ponce de Leon set foot on the mainland of what is now the United States. A short time later Balboa crossed the narrow strip of land that separated the Atlantic and Pacific Oceans. He called the mighty ocean that he found the Southern Sea. Magellan later changed the name to the Pacific Ocean.

Cortez Conquers the Indians

The next step in the final discovery of California was taken by Hernando Cortez (sometimes spelled Cortes). The map below shows where he landed at a point which he called Vera Cruz, some 400 years ago. He entered the city of Mexico the following year. The people that lived in the country were known as Aztecs and their ruler was called Montezuma. Cortez made friends with Montezuma and having won his confidence took his country away from him. This land he called New Spain. It was very great in size. It covered all of what is now called Mexico and also a great part of the south western end of our own United States. Cortez himself had little idea of just how large it really was. It took him 15 years to discover the long arm of land now called Baja (lower) California.

How California Received Its Name

The first mention of the word California was made in a Spanish book which was printed after Columbus came to America.

It was the story of a wonderful island to the east of the Indies. Everyone was very rich. Precious stones and gold were plentiful. The people were black in color. They were ruled by a great, tall woman called Calafia.

This book was read by many people. The Spaniards who were always looking for treasure thought that the story was probably true. Cortez had other reasons to think that California did exist because Montezuma and the Aztecs wore many ornaments of gold.

Stories came to him that California lay somewhere to the north. He sent out searching parties to find out if this was true. Ulloa, Diaz and Alarcon were some of the leaders who explored the west coast of New Spain. Alarcon finally reached the Colorado River in the year 1540. There are no records, however, to show that he landed on California soil.

The First White Man Arrives in California

Juan Rodriquez Cabrillo sailed into San Diego Bay in September, 1542. His path along the shores of California is given on the map. He lived but a short time after his arrival.

Thirty-seven years passed and another explorer sailed into a California port. He was an Englishman, named Sir Francis Drake.

Twenty-three more years passed before California had another visitor. This time it was a Spaniard, Don Sebastian Viscaino. He followed much the same path (5) as did Cabrillo, but sailed much farther to the north. He has given us the best descriptions and other records of any of the earlier explorers.

When the Spaniards first arrived in California they found many Indians. The red men were the first Californians. Some of the tribes lived a quiet and peaceful life while others were very warlike.

These early red men were divided into many tribes. They went by such odd names as Soboba, Yuma or Morongo. We have records that show that 22 different languages were spoken. In one way they were all very much alike—one word was used for an entire sentence.

The chief amusements of the Indians were singing and dancing. For music they played on flutes made from reeds and kept time by the slow beat of the tom-tom. Their sports were running races, shooting with the bow and certain kinds of ball games.

Only the tribes that lived in the deserts had much trouble in getting food. In the mountain and valley regions fish and animals were plentiful. The Indians who lived near the coast ate shell fish. Large shell mounds may still be seen near San Francisco. During the Mission Period 30 thousand Indians lived in or around the missions. Today there are only 19 thousand living in the entire state. The reservations or government land which have been set aside for them are shown on the map.

Have you ever visited one of these reservations? You will find them very interesting.

One hundred and sixty-seven years passed after Viscaino's visit before the Spaniards again became interested in California.

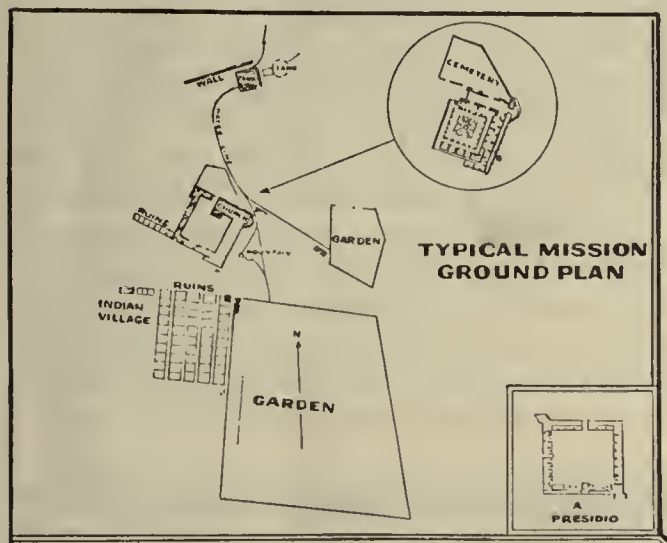
Gasper de Portola, Father Junipero Serra and a party of men arrived in San Diego in 1769. Portola hoped to find the exact position of Monterey. He also was in search of locations for new missions. Father Serra had come to make Christians of the Indians.

Portola did not wait long in San Diego. Taking some 60 men with him he started on a march to the north. The Spaniards needed a safe harbor for their boats.

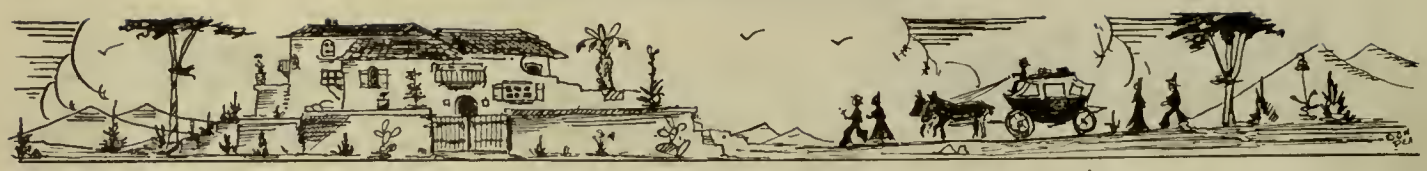
It was six months before Portola returned to San Diego. He did not find Monterey Bay. One of his men, named Ortega did discover a large body of water which he had seen from the top of a nearby hill. Portola could not have known that this was the finest harbor on the coast. He would not have told Father Serra that his expedition was a failure if he had known that Ortega's discovery was San Francisco Bay.

The map shows us the missions that were built along the road known as El Camino Real. It took 54 years to complete the task. Many missions are still standing, although some of them have had to be repaired in recent years.

How many of the missions have you seen?



PACIFIC OCEAN
SAN FRANCISCO de SOLANO - 1823 (21)
SAN RAFAEL ARCANGEL - 1817 (20)
SAN FRANCISCO (DOLORES) - 1776 (6)
SAN FRANCISCO de ASSISI
SAN JOSE - 1797 (14)
SANTA CLARA - 1777 (8)
SANTA CRUZ - 1791 (12)
SAN JUAN BAUTISTA - 1797 (15)
SAN CARLOS de BARROMEO - 1770 (2)
SOLEDAD (NUESTRA SENORA de) - 1791 (13)
SAN ANTONIO de PADUA - 1771 (3)
SAN MIGUEL - 1797 (16)
SAN LUIS OBISPO de TOLOSA - 1772 (5)
LA PURISIMA CONCEPCION - 1787 (11)
SANTA YNEZ - 1804 (19)
SANTA BARBARA - 1786 (10)
SAN BUENAVENTURA - 1782 (9)
SAN FERNANDO - 1797 (17)
SAN GABRIEL - 1771 (4)
SAN JUAN CAPISTRANO - 1776 (7)
SAN LUIS REY - 1798 (18)
SAN DIEGO - 1769 (1)
EL CAMINO REAL
ANZA TRAIL
A Typical Mission
San Antonio De Padua - 1771
MISSION CHRONOLOGY
1210 FRANCISCAN ORDER FOUNDED BY ST. FRANCIS OF ASSISI & 7 DISCIPLES
1220 OVER 5000 FOLLOWERS
1260 MORE THAN 1400 CHURCHES
1493 FATHER JUAN PEREZ COMES TO U.S.
1508 ESTABLISH MISSIONS IN VENEZUELA
1519 " " " BRAZIL
1521 " " " MEXICO
1528 " " " FLORIDA
1539 " " ARIZONA & N. MEX.
1769 FATHER JUNIPERO SERRA BUILT FIRST to CALIFORNIA MISSION - 30,000 INDIAN
1823 NEOPHYTES LIVED UNDER MISSION GUIDANCE
1834 MEXICO BEGAN CONFISCATION IN CALIF.
1846 MISSIONS TAKEN FROM FRIARS
CALIFORNIA MISSIONS
LEGEND
†-MISSION
①-ORDER OF FOUNDING
1789-DATE
50-MILEAGE BETWEEN
COPYRIGHT

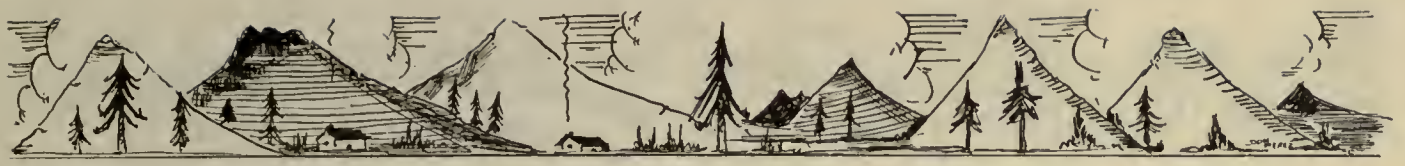


The Mission Period, as it has been called, lasted for more than 50 years. Twenty-one missions in all were built following the arrival of Father Serra in San Diego. They were connected by a road called El Camino Real, which means the Royal or King's Highway. Many Indians lived peacefully in or near the missions. They worked in the fields and received good food, schooling and religious training in return for what they produced.

Along the coast, near the present cities of San Francisco, Los Angeles and San Diego, large pieces or grants of land were given to certain favored subjects by King Carlos III of Spain and later by the Mexican rulers.

The churches or missions, of course, received the most land. In some cases their boundaries took in an entire valley. This was true of the San Gabriel Mission, near Los Angeles. San Fernando Mission covered 100 thousand acres. A number of privately owned ranchos of 25 and 50 thousand acres were common. Many of our streets and towns today bear the names of these early land grants.

The ranch houses were large, one-story buildings built of adobe. This adobe was made from earth or clay that had been mixed with water and dried in the sun. The walls were several feet thick. Nearly every house had a flower filled garden or patio in the center.



The owners of the large ranchos lived like kings. They had many heads of cattle and countless thousands of sheep. Wild horses roamed the hills. It was the horse age. They were used for many purposes. Everyone rode horseback. It was the only easy way to get about. Automobiles and airplanes were unthought of and in the earliest days wagons, such as we have today, were unknown.

Our own rodeo or round-up came to us from the Mission Period. People would ride for days to see one of these shows. Trick and fancy riding and the throwing and branding of the animals drew big crowds. The early Californians were great horsemen.

We are told that the people of the Mission Period lived a very happy and contented life. They were never troubled by unpleasant callers from other lands. The visit of De Anza, who came into the state from Mexico (see Map on page 5), was about the only one of importance until 1826. A few pirates raided some of the coast towns and several explorers made short calls, but for the most part no one bothered the people of California.

Everybody was very polite in those early days. If a traveler from a nearby town knocked at a strange door, he would be sure to hear, "Come in. This house is yours."

The women of the Mission Period dressed in gay colors. They wore their hair high on their heads, held in place by tall, jewelled combs. Rare silk shawls hung from their shoulders.

When night fell, soft lights would be hung from each hacienda (house) and the sweet music of string instruments could be heard throughout the land.

During the period that the Mexicans were rulers in California more land grants were given. When California became part of the United States, in 1850, most of the ranchos were being divided into smaller pieces of land. Today there are only a few of them left.

During the mission and early land grant days an unbroken wilderness of mountains and deserts lay to the east of California. There were no roads such as we have today and the pioneers had to break their own trails across the country. It took a strong and brave man to make the attempt.

Jedediah Smith, a young hunter and trapper, was the first white man to arrive. He came in search of furs and remained to make California history.

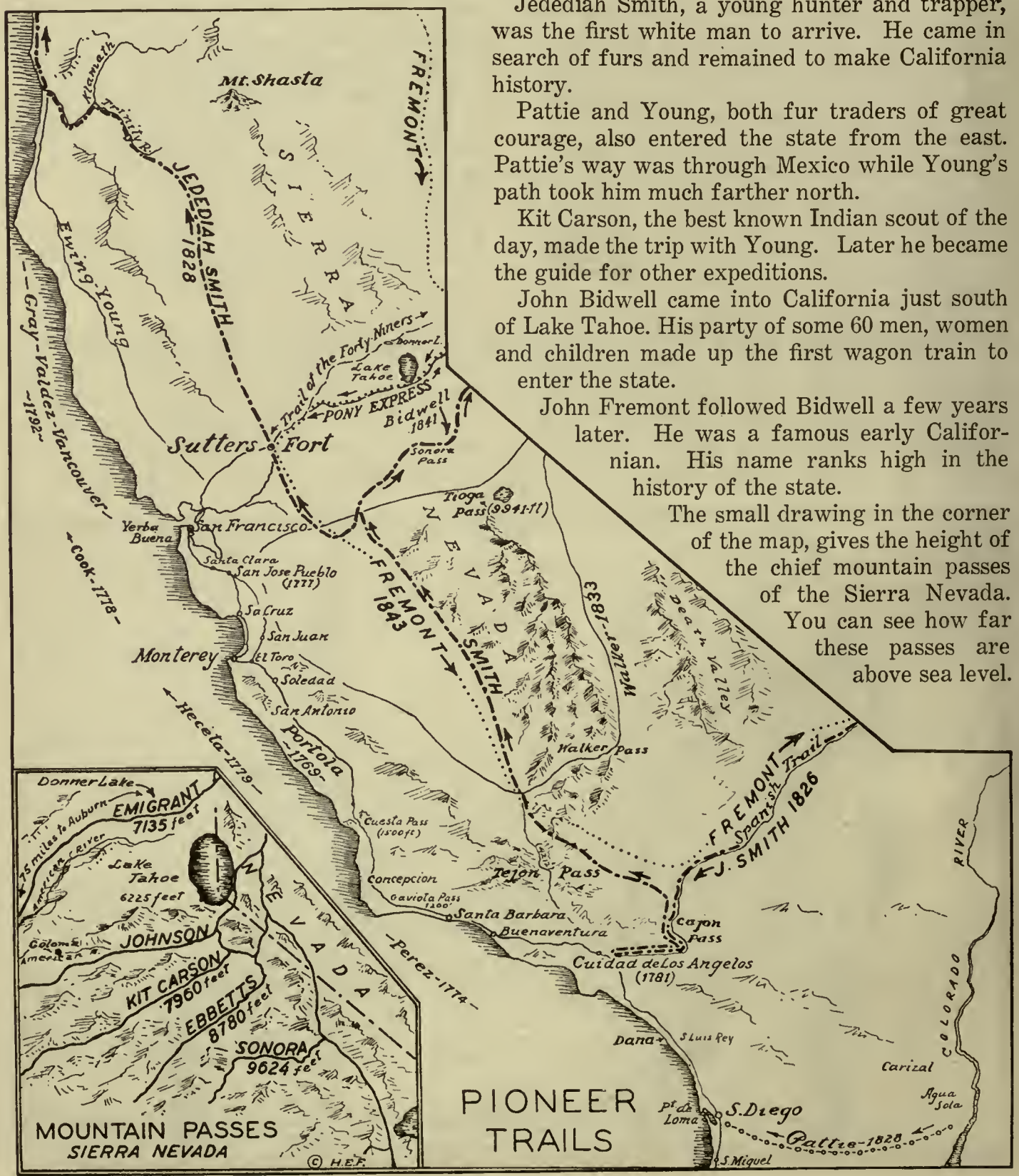
Pattie and Young, both fur traders of great courage, also entered the state from the east. Pattie's way was through Mexico while Young's path took him much farther north.

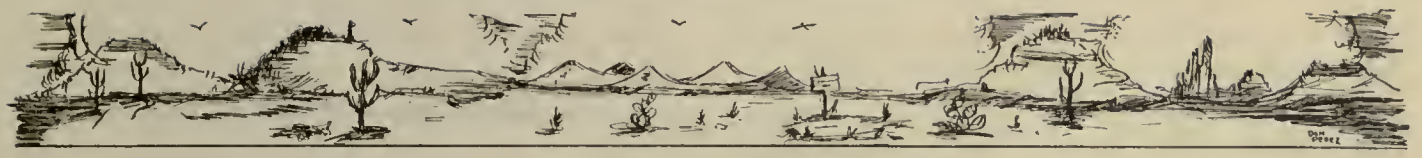
Kit Carson, the best known Indian scout of the day, made the trip with Young. Later he became the guide for other expeditions.

John Bidwell came into California just south of Lake Tahoe. His party of some 60 men, women and children made up the first wagon train to enter the state.

John Fremont followed Bidwell a few years later. He was a famous early Californian. His name ranks high in the history of the state.

The small drawing in the corner of the map, gives the height of the chief mountain passes of the Sierra Nevada. You can see how far these passes are above sea level.





Six countries at one time or another claimed some part of California. The different explorers would plant their flags in the ground and lay claim to the land in the name of the king or queen who had sent them.

The Indians were the first people here but they had no flag.

1. The Spanish flag flew over most of California for 280 years.

2. Drake planted the English flag near San Francisco in 1579. It probably remained where it was placed for only a short time after he sailed away.

3. The Russians kept small trading posts at Fort Ross and Bodega Bay for nearly 40 years.

4. Mexico won its war with Spain in 1822 and California became a Mexican province. The Mexican flag flew throughout the state for nearly 25 years.

5. The Bear flag was first raised in July, 1846. It was made by a group of Californians who wished to free themselves from the Mexicans.

6. The United States took California from the Mexicans the same year—1846. It became the 31st state of the union in September, 1850.

Three hundred and eight years after Cabrillo landed at San Diego, California was taken into the United States.

Who planted the first flag in California? Where did he plant it?

We have seen how California was discovered. You will remember that the first Spanish explorers came to our shores from New Spain (Mexico). A few, like Drake, came from across the sea. It was always a question whether their tiny boats could make the journey. Cold, storm and starvation were the three things that they feared the most. We will never know how many died on the way. Most of the records have come from those who lived to tell the tale.

Our land travellers collected the best information about the early days of California. Many of them wrote their friends and told them about the new land of sunshine. People began to take an interest in California. Sutter arrived about 1839. He built a trading post and traded with the Indians. Sutter's Fort is still standing in Sacramento. He was one of our most famous early Californians. Gold was discovered in 1848.

The Gold Rush

When James Marshall found gold in the American River, not far from Sutter's Fort, few people lived in California. There might have been as many as would fill one of our large college football grandstands. The Olympics in Los Angeles drew more than 100 thousand people on several days. There were fewer people than this living in the state two years after the Gold Rush started.

When the news spread over the country that gold was to be found in California people started for the West from every state in the Union. The cry "On to California" was raised even in distant lands across the sea.

There is nothing in the history of the world like the wild rush that followed. People came from every direction. Most of them, however, arrived from the east. They came overland on horseback, in wagons and even on foot.

The Covered Wagon or Prairie Schooner

It was in these early days that the first covered wagons arrived. Drawn by oxen or horses, these Prairie Schooners, as they were called, would cross the wilderness in long trains. Many pioneers brought their families with them. Sometimes they were attacked by Indians. Sometimes their food supply would give out. Those who came by way of the south had parching deserts to cross. A num-

Covered Wagon Days in California Paramount Productions

ber perished in the burning sands of Death Valley, others in the Mohave and Colorado Deserts farther south. All who came overland had mountains to cross at one place or another. The gold fields themselves were a mile or more above sea level. If the traveler failed to reach them before the winter snows set in he would have to make camp and wait for the coming of spring. One train of covered wagons, headed by a man named Donner, was caught in a snow filled pass not much more than 50 miles from the gold country. Many of the party were frozen before they were finally able to get help.

Stage Coaches and the Pony Express

The next step that brought California somewhat nearer to the rest of the country was the overland stage. These stage coaches were drawn by four or six strong horses. They would carry about a dozen passengers. To ride on one was very exciting. Many of them were held up by bandits. The cry, "everybody out," meant to crawl from the coach with hands held high in the air. A great deal of gold was sent across the country over these stage lines. They were a popular means of travel while they lasted. Any quick way of getting into California was welcomed.

The Pony Express was used to send mail and packages in those early days. Daring riders on swift ponies were able to bring their mail sacks from across the Rockies in a week or so. They also had a great deal of trouble with robbers, or "road agents" as they were called. It took a brave man to be a rider on the Pony Express.

(Maps on pages 8 and 78 show us the trail used by the riders of the Pony Express.)

Improvement in Ocean Travel

While most of the gold seekers came in to the state by overland trail there were others that came by water. An improvement had been made in the size and speed of the ships in use. Large sailing vessels called Clipper Ships were built. They made the trip around South America from New York in about six months. Other newcomers sailed from the east to the small strip of land that separates North and South America. They would make their way across this isthmus and wait for a boat to take them the rest of the way. Sometimes they waited a long time. Then again they might be unlucky and find the next boat too crowded to take them. Everyone was bound for the gold fields from far and near. They had to take chances whether they came by land, around South America or across the isthmus. Gold was the magnet that drew them.

The First Railroad

We have seen how the finding of gold brought many new people into California. Some 50 thousand arrived in a short time following Marshall's discovery. Few of them settled in the cities. For instance, San Diego had a population of 731 people in 1860. This was 318 years after it had been founded. Los Angeles had less than 5 thousand the same year. San Francisco, the largest city in the state had 56 thousand.

Most of the people were scattered throughout the mining districts. Many of them were living on farms. They had found that gold could also be had by selling the farm products which would grow so easily from California soil.

Twenty years after the days of the gold rush the first railroad into California was completed. It marked the passing of the old stage lines and pony express. From that time on the increase in population has been rapid.

The Panama Canal

The Panama Canal, which was finished in 1914 has done a great deal for California. The trip from the east coast can be made in several weeks. Boats which used to go around South America now save thousands of miles. The cost of shipping or receiving freight by boat from the east is much less than the cost of moving it by rail across the country. Every time that any improvement in the speed of travel takes place it helps California. Trains now come from the Middle West in 2½ days. Boats cross the Pacific Ocean from Japan in less than two weeks. Airplanes have flown from New York to California between sunrise and sunset. We are not a "distant land" as we were in the earlier days of our history.

Catalina Island Company

Pleasure Boats at Catalina Bay

Before we take up the subject of the land portions of California let us consider the Pacific Ocean and its effect on the life and pleasures of the people of the state.

The Pacific is the largest body of water in the world. From San Francisco to Japan the distance across the ocean is nearly 5 thousand miles. This is just about twice the distance across the United States between San Francisco and New York. (See the map on page 60.)

The nearest land to the west of California is the Hawaiian Islands, some 2 thousand miles away. These are owned by the United States.

Very few storms visit California. The ocean is usually quiet and the water is seldom cold. As a result we find that many people enjoy bathing and boating a great part of the year.

Approaching California the Shore Line Looks Rugged and Mountainous

The Ocean is Kind to California Most of the Year

Less than twenty-five miles off shore from Santa Barbara are the Channel Islands. They stretch for sixty miles from east to west. Many years ago these islands were overrun with Indians. The shifting sands of San Miguel still uncover many bones.

Santa Cruz Island is about twenty-three miles long and seven miles wide. It is wooded, has plenty of water and has many interesting caves along its shore line. Fox and wild boar are found on Santa Cruz and many seals swim in the surrounding waters. Motion picture companies sometimes take pictures on and near the island.

Santa Rosa Island is shorter and wider than Santa Cruz. Parts of it are being used by ranchers.

San Miguel Island is of great interest as the burial place of Cabrillo. The location of his grave has remained a mystery.

Many wrecks lie off Bennett Point at San Miguel. It is said that a large vessel laden with silver lies buried in the sea not far away.

Anacapa Island is just west of Santa Cruz Island.

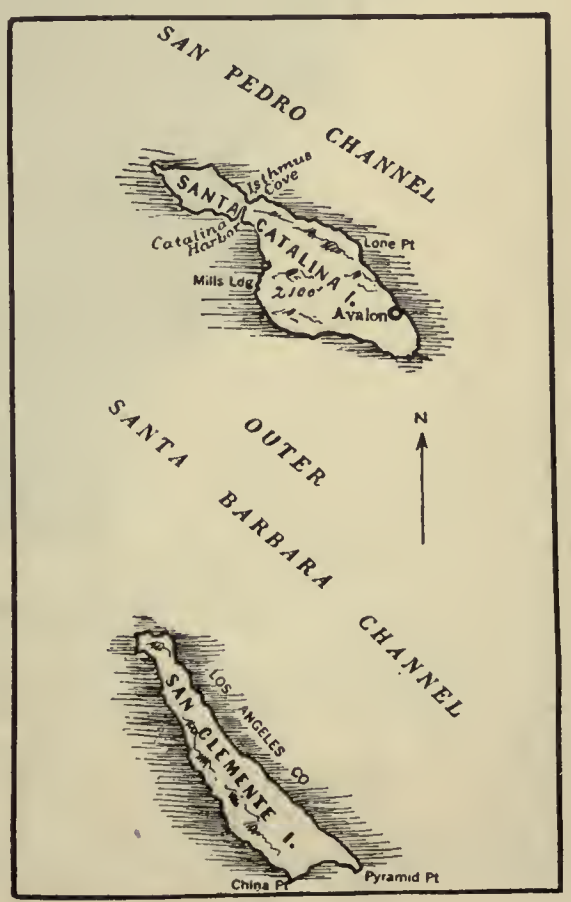
South of the Channel Islands lie Santa Catalina, San Clemente, Santa Barbara and San Nicolas islands (see map on page 47).

San Nicolas Island lies fifty odd miles south of Santa Cruz Island and the same distance west of Catalina. Its highest point is 890 ft. above sea level. In 1835 a ship brought to the mainland the Indians who had made the island their home. Many years later it was found that they had left an old Indian woman on the island. In all that period she had not seen a human being. Her speech had entirely left her through lack of use. She lived but a short time after being brought to the mainland at Santa Barbara.

Santa Catalina Island is the only one of the large islands of California that has had much development. It has been made into a pleasure resort. The natural beauties, the caves and bays, under water gardens, shell and moonstone beaches are famous. The island has many wild goats roaming the hills. It is a mile or so shorter than Santa Cruz and covers less area. Many important moving pictures have been made at Catalina. In 1840 the island was given to Don Pio Pico by the Mexican government. Four years later he traded it for a horse and saddle. Catalina has changed ownership many times since. Even smugglers have made it their home.

San Clemente Island is the same length as Catalina but is only a little over three miles wide. It is principally used by fishing parties.

All of these islands became part of the United States as a result of a treaty with Mexico in 1848 although they were not mentioned in the treaty and the question of ownership has come up on several occasions.



California is a very large state. On page 84 you can see its size as compared with other parts of the country. If you look at the map below you will notice that it is also a very mountainous state.

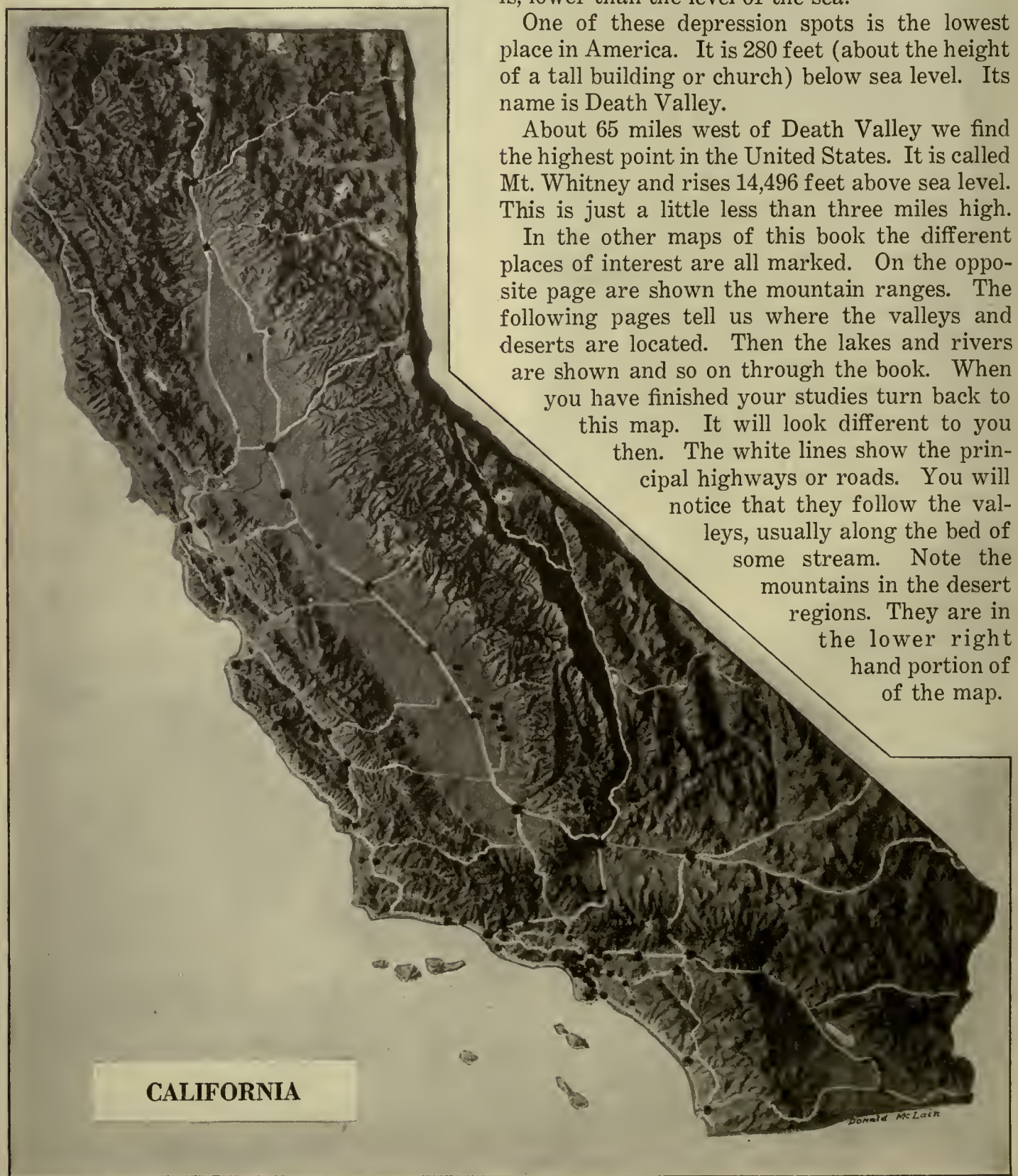
The light parts of the map are the valleys and the darker parts are shadows made by the mountains. The long flat portion in the center is called the Great Valley. The names of the mountains are shown on the next page.

We speak of the height of land by saying that it is so many feet above the ocean. California has two places that are even lower than the ocean. They are said to be "below sea level," that is, lower than the level of the sea.

One of these depression spots is the lowest place in America. It is 280 feet (about the height of a tall building or church) below sea level. Its name is Death Valley.

About 65 miles west of Death Valley we find the highest point in the United States. It is called Mt. Whitney and rises 14,496 feet above sea level. This is just a little less than three miles high.

In the other maps of this book the different places of interest are all marked. On the opposite page are shown the mountain ranges. The following pages tell us where the valleys and deserts are located. Then the lakes and rivers are shown and so on through the book. When you have finished your studies turn back to this map. It will look different to you then. The white lines show the principal highways or roads. You will notice that they follow the valleys, usually along the bed of some stream. Note the mountains in the desert regions. They are in the lower right hand portion of of the map.



The Sierra Nevada are the highest and best known mountains in California. They average nearly two miles in elevation and extend for more than 400 miles along the eastern edge of the Great Valley. Above Lassen Peak they connect with the Cascade Mountains, a northern range of mountains that comes into the state from Oregon.

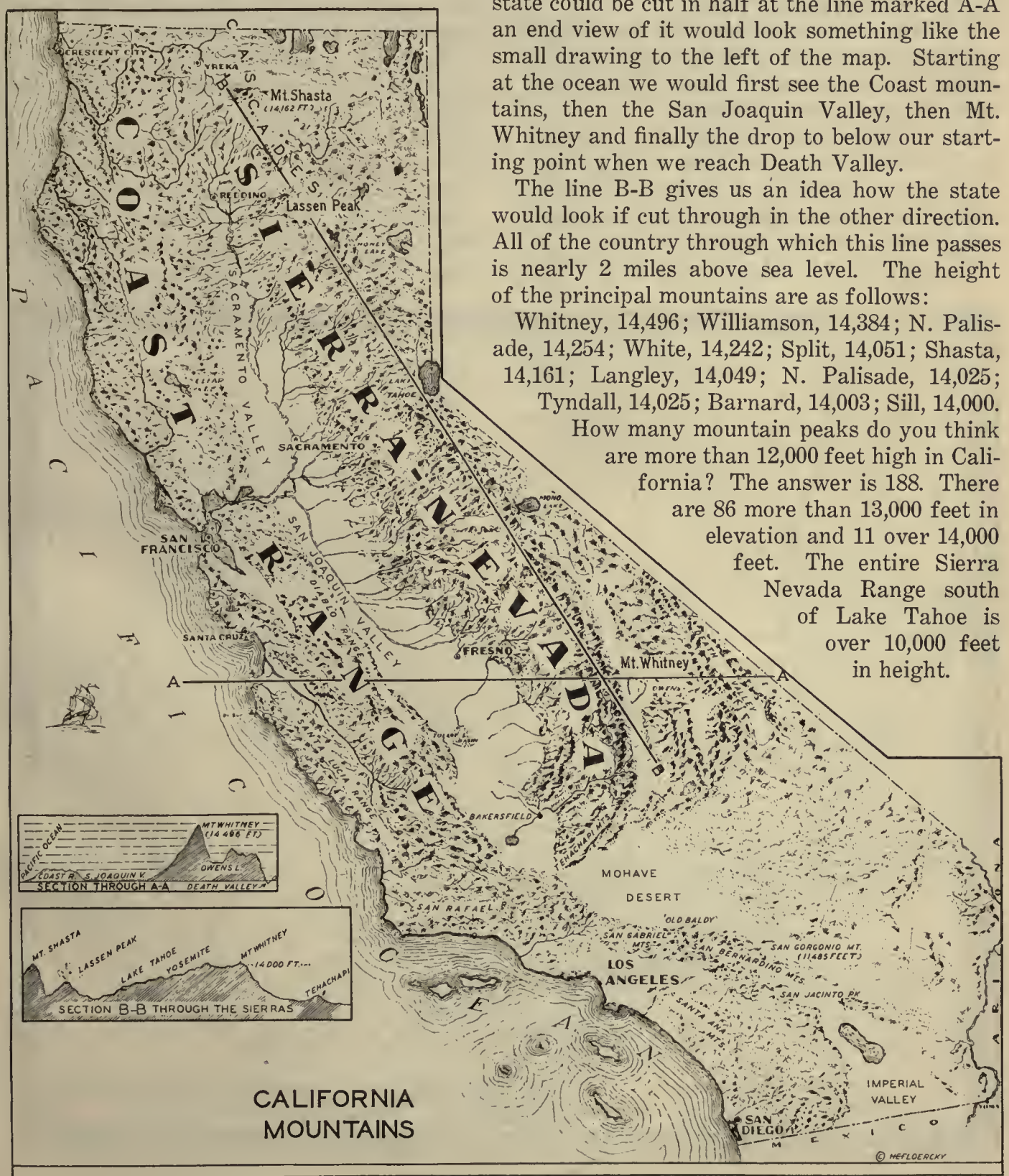
The Coast Range is the name given to the mountains that border the Pacific Ocean. Below Los Angeles the mountains are more scattered and are called by different names. (Only a few of the large ranges are shown on the map.)

The Coast Range mountains are only half the elevation of the Sierra Nevada Range. If the state could be cut in half at the line marked A-A an end view of it would look something like the small drawing to the left of the map. Starting at the ocean we would first see the Coast mountains, then the San Joaquin Valley, then Mt. Whitney and finally the drop to below our starting point when we reach Death Valley.

The line B-B gives us an idea how the state would look if cut through in the other direction. All of the country through which this line passes is nearly 2 miles above sea level. The height of the principal mountains are as follows:

Whitney, 14,496; Williamson, 14,384; N. Palisade, 14,254; White, 14,242; Split, 14,051; Shasta, 14,161; Langley, 14,049; N. Palisade, 14,025; Tyndall, 14,025; Barnard, 14,003; Sill, 14,000.

How many mountain peaks do you think are more than 12,000 feet high in California? The answer is 188. There are 86 more than 13,000 feet in elevation and 11 over 14,000 feet. The entire Sierra Nevada Range south of Lake Tahoe is over 10,000 feet in height.



Have you ever had boric acid put in your eyes? Do you use talcum powder in your house? Is borax in your kitchen for cleaning? Strange as it may seem, all of these things probably came to you from the deserts of Southern California. The map below shows us a picture of the larger deserts of the state. The fact that they have little or no water has kept people away from them.

You will notice that there are both mountain ranges and valleys on the map. Deserts are not always entirely of sand. Parts of the Mohave Desert are quite rocky.

Death Valley, the most talked of desert in the state, is a long, low strip of land, surrounded by mountains. It is very hot, one of the hottest places on earth. It is the home of horned toads, snakes and strange lizards. At one point it is 276 feet below sea level. This is the lowest spot in either North or South America. There are only two places on the entire earth that are any lower.

The Mohave Desert is the name given to the whole area that lies above Los Angeles. A great deal of cement and lime is taken from the Mohave Desert each year. The increased use of automobiles has made it necessary to build good roads through the deserts. Many people now go to them at vacation time.

Many hills and mountain ranges are found throughout both the Mohave and Colorado Deserts. The Mohave is several thousand feet above sea level and gets quite cold in winter.

Our deserts produce potash, copper, silver, soda and talc. Most of the world's supply of borax comes from the dry lakes of the Mohave Desert north of Los Angeles.

California Deserts

A valley is a hollow or scooped out portion of land bounded by hills or mountains. It usually has a stream or river flowing through its center. The valley lands of California produce most of our fruit and vegetables. They make the best farm lands because of their fertile soil.

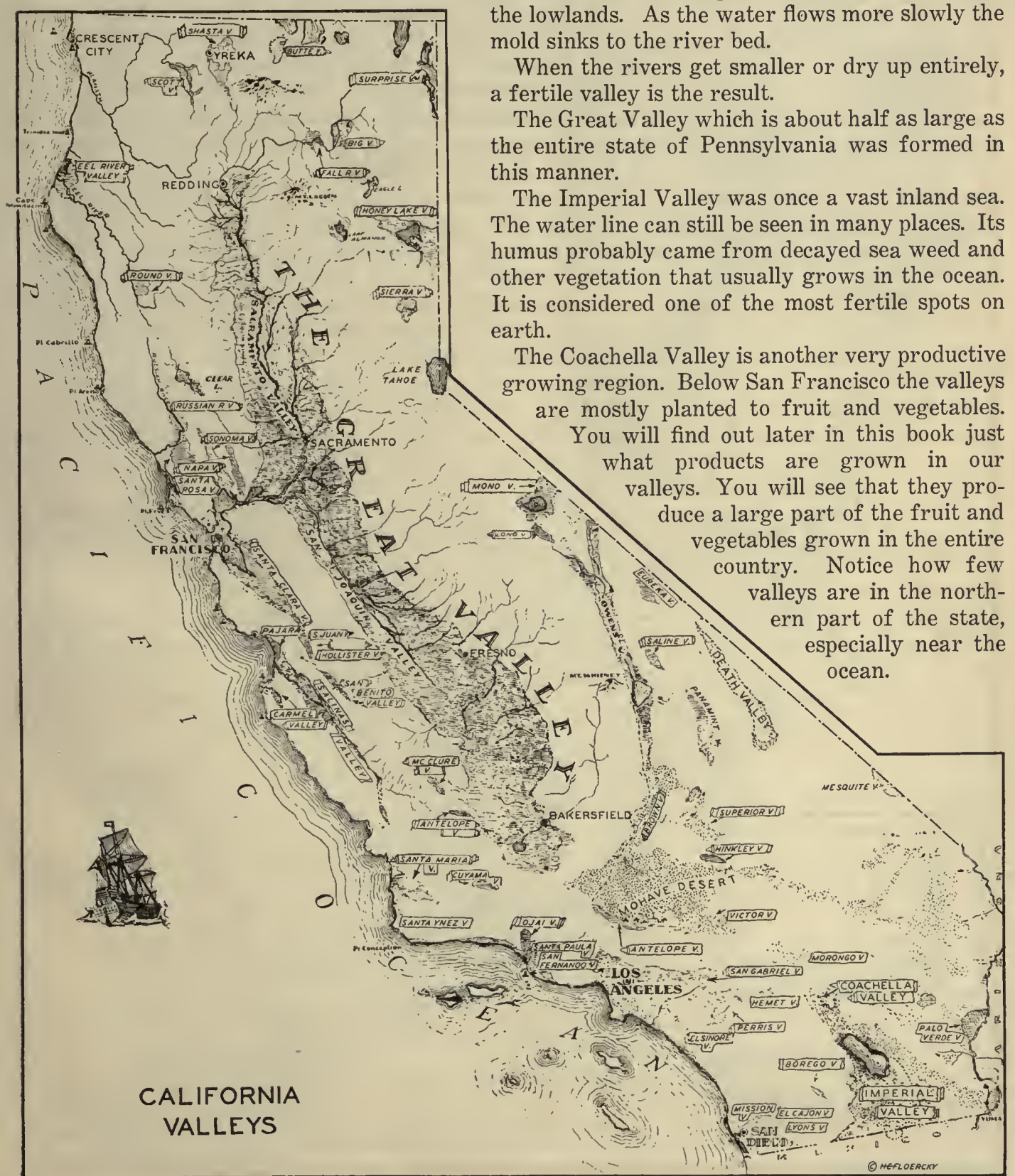
A fertile land has soil that is rich in the materials that make things grow. A fertile soil is usually fine and soft and full of humus or leaf mold. This mold is formed from dead and decayed leaves and other vegetable matter. It washes down to the floor of the valleys from the forest regions in the higher mountains. The rivers that carry this mold lose their rapid movement as they reach the lowlands. As the water flows more slowly the mold sinks to the river bed.

When the rivers get smaller or dry up entirely, a fertile valley is the result.

The Great Valley which is about half as large as the entire state of Pennsylvania was formed in this manner.

The Imperial Valley was once a vast inland sea. The water line can still be seen in many places. Its humus probably came from decayed sea weed and other vegetation that usually grows in the ocean. It is considered one of the most fertile spots on earth.

The Coachella Valley is another very productive growing region. Below San Francisco the valleys are mostly planted to fruit and vegetables. You will find out later in this book just what products are grown in our valleys. You will see that they produce a large part of the fruit and vegetables grown in the entire country. Notice how few valleys are in the northern part of the state, especially near the ocean.



There is one spot in the Mohave Desert that was without rain for more than two years. Other parts of California have over 100 inches a year.

The northern part of the state gets most of the rainfall. The numbers on the map show the inches of rain that falls each year. There are over 300 places in the state where the rainfall is measured. This is how the weathermen are able to tell us ahead of time how much rain we may expect to get.

The wind in California nearly always blows from the ocean. In its travel, over miles of water, it draws up a great deal of moisture (water). It holds this moisture but we cannot see it.

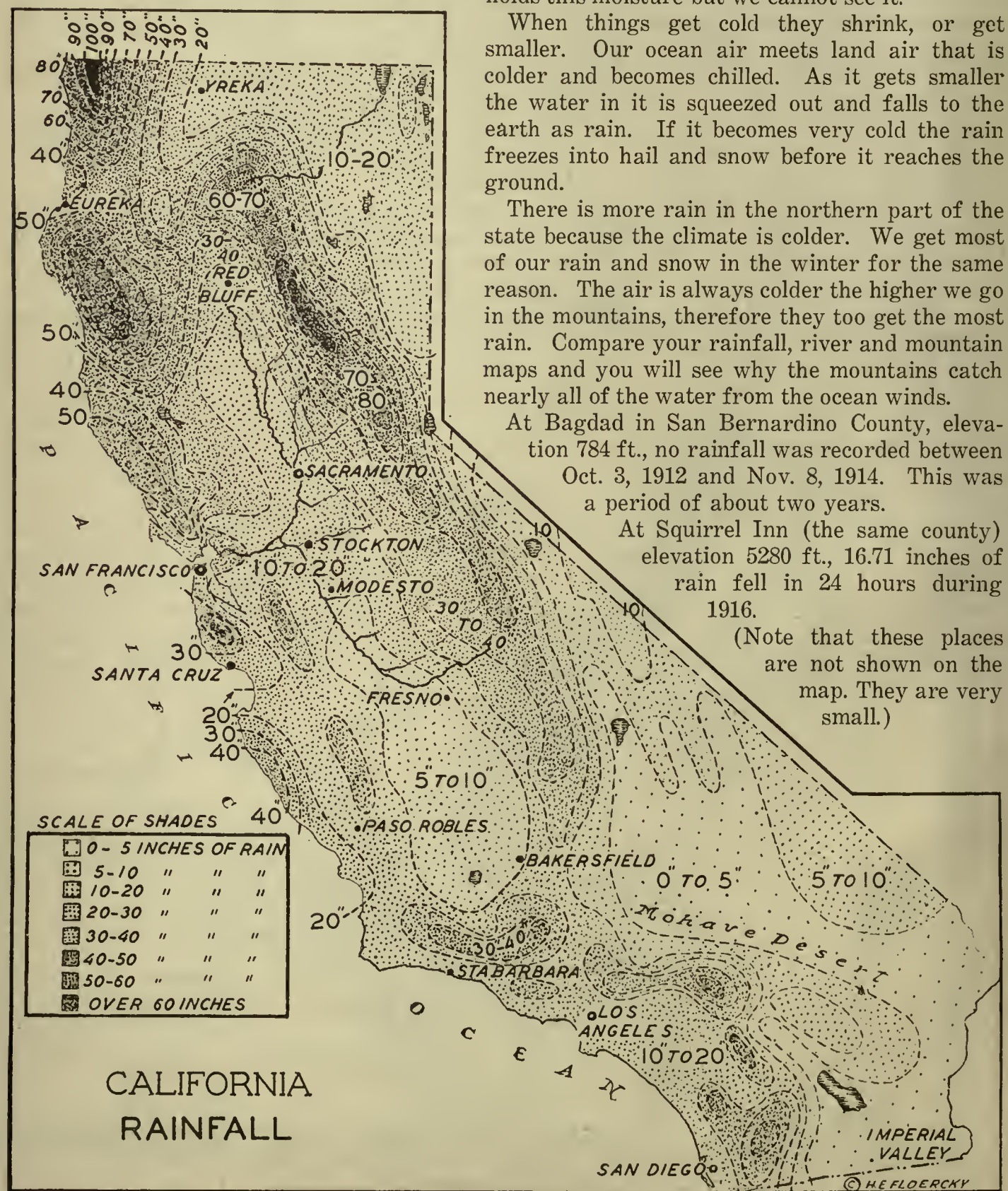
When things get cold they shrink, or get smaller. Our ocean air meets land air that is colder and becomes chilled. As it gets smaller the water in it is squeezed out and falls to the earth as rain. If it becomes very cold the rain freezes into hail and snow before it reaches the ground.

There is more rain in the northern part of the state because the climate is colder. We get most of our rain and snow in the winter for the same reason. The air is always colder the higher we go in the mountains, therefore they too get the most rain. Compare your rainfall, river and mountain maps and you will see why the mountains catch nearly all of the water from the ocean winds.

At Bagdad in San Bernardino County, elevation 784 ft., no rainfall was recorded between Oct. 3, 1912 and Nov. 8, 1914. This was a period of about two years.

At Squirrel Inn (the same county) elevation 5280 ft., 16.71 inches of rain fell in 24 hours during 1916.

(Note that these places are not shown on the map. They are very small.)



The rivers that flow into the Great Valley of California look like the branches of a mighty tree. If you will turn your book sideways you will see that this is true.

These rivers that empty into the Sacramento and San Joaquin rivers are short and very swift. They seem to be in a hurry to carry our precious water off to the ocean.

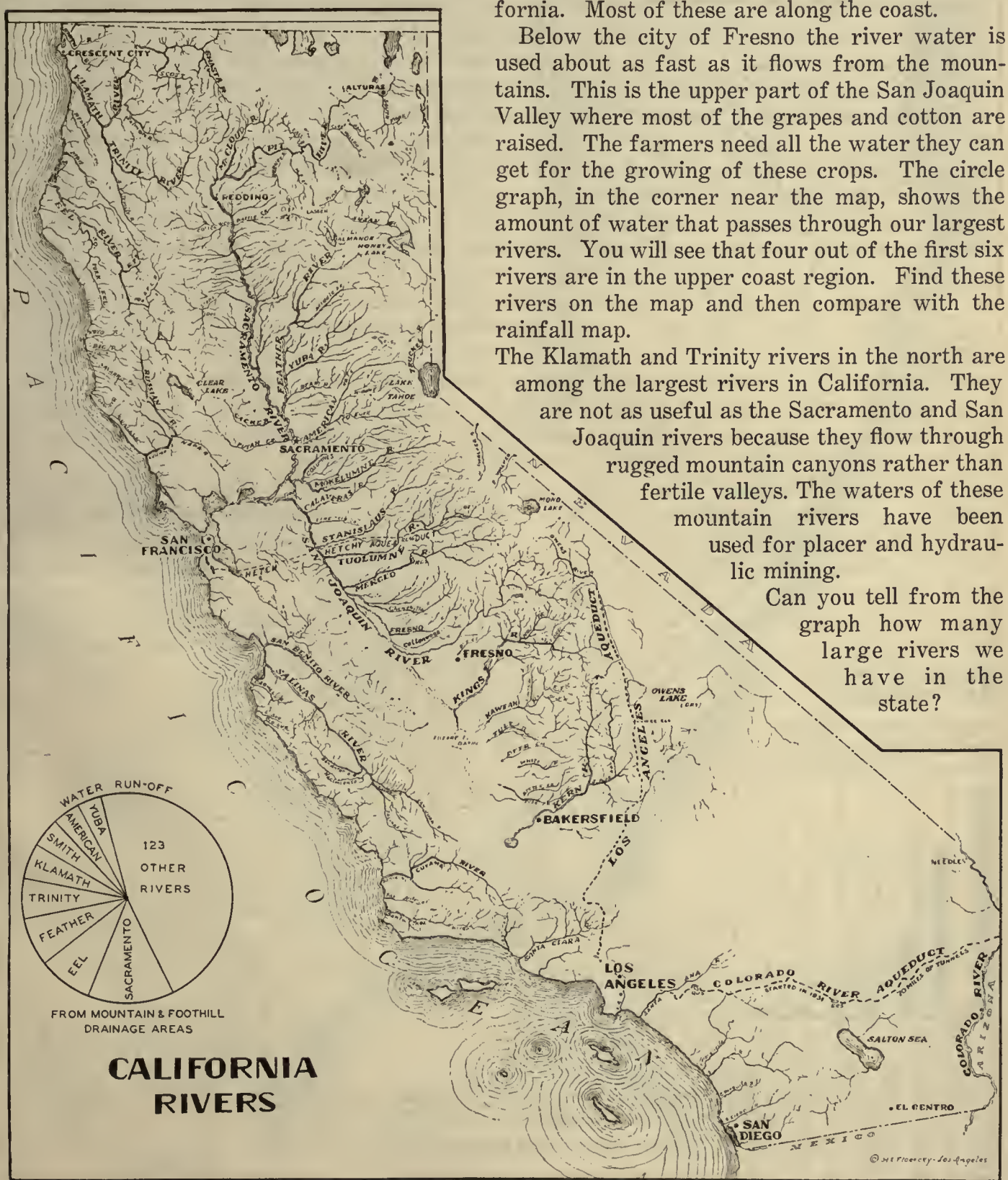
The amount of rain that falls makes our rivers but it is the melting snows that keeps the water in them most of the year.

Very little rain falls in the southern part of the state. The small amount of snow that falls in the higher mountains soon melts away. There are only a dozen or so rivers in Southern California. Most of these are along the coast.

Below the city of Fresno the river water is used about as fast as it flows from the mountains. This is the upper part of the San Joaquin Valley where most of the grapes and cotton are raised. The farmers need all the water they can get for the growing of these crops. The circle graph, in the corner near the map, shows the amount of water that passes through our largest rivers. You will see that four out of the first six rivers are in the upper coast region. Find these rivers on the map and then compare with the rainfall map.

The Klamath and Trinity rivers in the north are among the largest rivers in California. They are not as useful as the Sacramento and San Joaquin rivers because they flow through rugged mountain canyons rather than fertile valleys. The waters of these mountain rivers have been used for placer and hydraulic mining.

Can you tell from the graph how many large rivers we have in the state?



There are 7 drainage basins in California. To drain is to draw off. We all know what a basin is. The rivers in these basins take the water from the high places, the mountains, and carry it to the low places, the valleys. The dotted lines on the map follow the highest mountain ridges. They are the rim or upper edge of the basin.

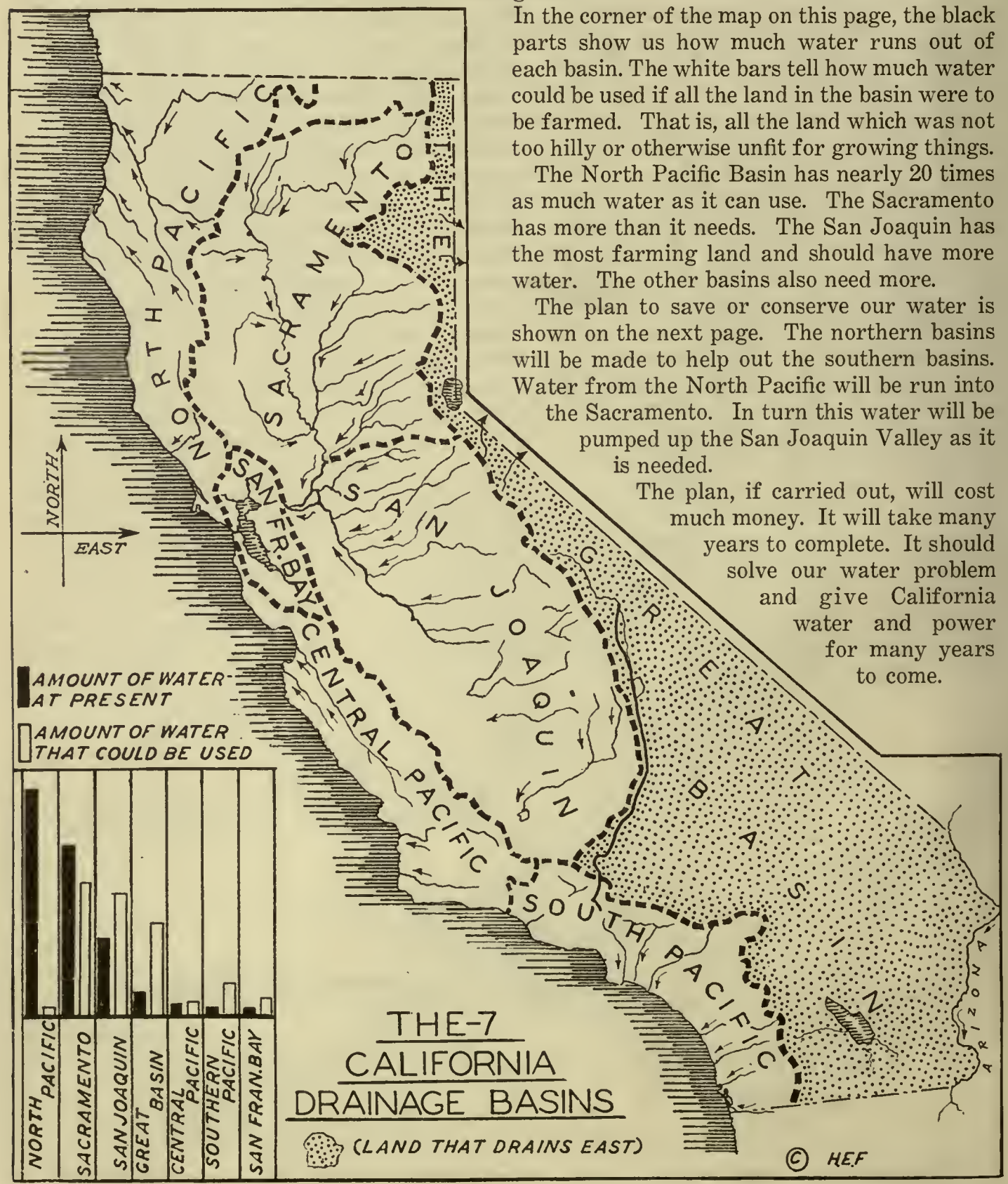
All of the water in the state flows into the ocean except from the Great Basin. The Great Basin is mostly to the east of California. On page 80 you will find a map that shows its exact size. The waters in it do not reach the ocean. Most of the streams dry up or sink into the ground.

In the corner of the map on this page, the black parts show us how much water runs out of each basin. The white bars tell how much water could be used if all the land in the basin were to be farmed. That is, all the land which was not too hilly or otherwise unfit for growing things.

The North Pacific Basin has nearly 20 times as much water as it can use. The Sacramento has more than it needs. The San Joaquin has the most farming land and should have more water. The other basins also need more.

The plan to save or conserve our water is shown on the next page. The northern basins will be made to help out the southern basins. Water from the North Pacific will be run into the Sacramento. In turn this water will be pumped up the San Joaquin Valley as it is needed.

The plan, if carried out, will cost much money. It will take many years to complete. It should solve our water problem and give California water and power for many years to come.



We have found that the rainfall in most of the states comes to us in the winter months. We know that the higher mountains are covered with snow. In the Sierra Nevada Range there are hundreds of lakes that are formed by this snow when it melts. But these lakes are small and the rivers that flow from them are deep and swift. Before the rains of the next year arrive the streams have carried most of the water away.

When a dam is built across a river it holds the water back. A lake is formed which becomes as deep as the dam is high. It is called a reservoir. The rain and melted snows are held in this man-made lake until needed. (See the Water Plan Map on this page.) It shows 24 reservoirs that are to be built. Some have already been completed. All of them together will hold back as much water as now passes down the Sacramento Basin. The Kennett Reservoir is by far the largest. To the west of it the water from the upper Trinity River will be turned into the Sacramento.

The dotted lines on the map show the canals that will be built to draw the water up the San Joaquin Valley. It will be pumped from the lower part of the Sacramento.

The southern part of the state will get its new water supply from the Colorado River. (The flood waters of the Santa Ana River are to be spread over sandy ground. They will sink into the earth and help build up the underground water supply.)

Note that most of the reservoirs are to be built in the Sierra Nevada Mountains. Do you know the reason? Which three reservoirs will hold half of the water to be saved? Can you find three aqueducts on the map? How many aqueducts are in the North Pacific Basin?

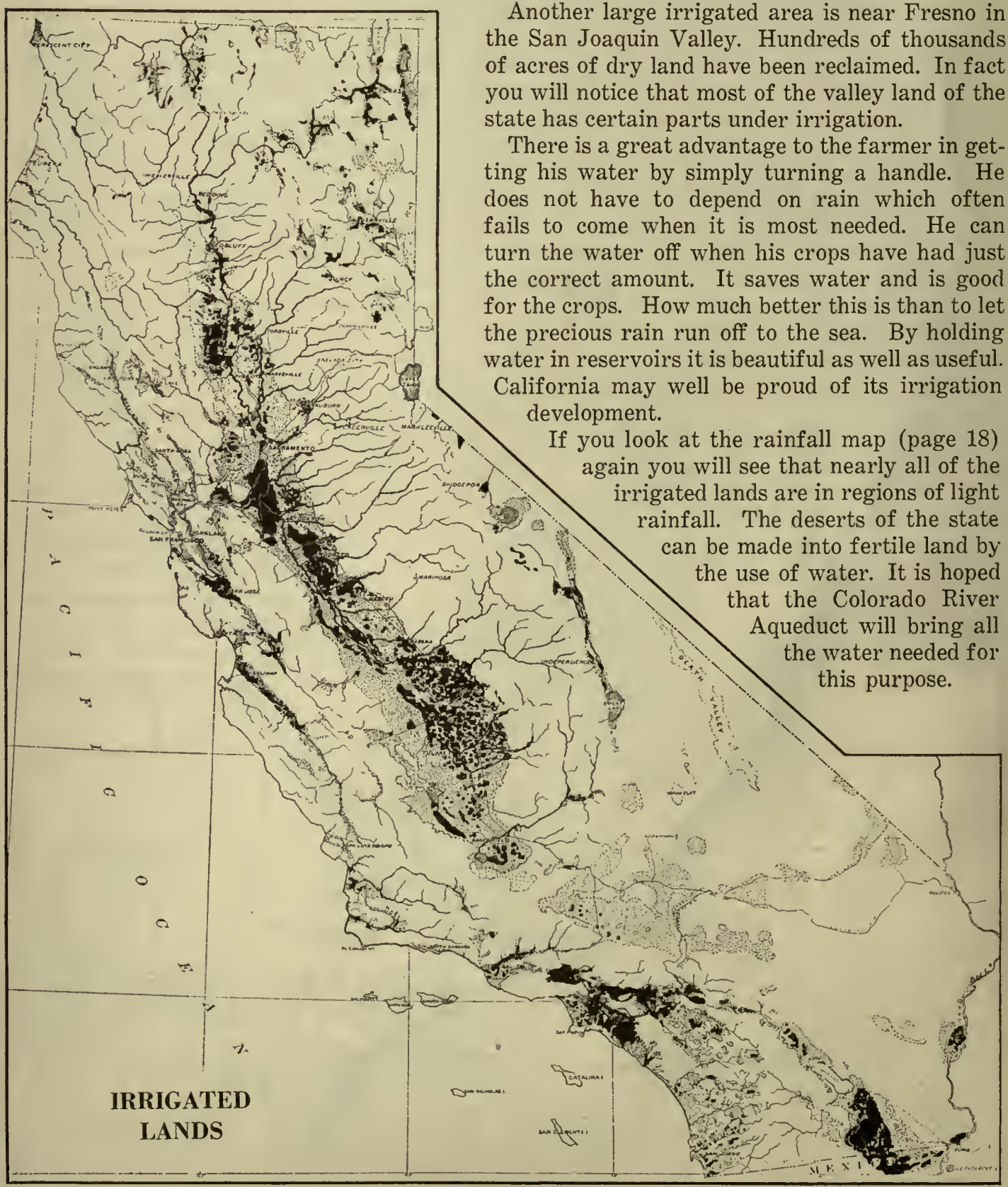
Nine out of every ten gallons of water in California are used on our farms. Water used in this way is called irrigation water. The irrigated parts of California are shown in solid black on the map. The dotted portion is valley land that can be irrigated if more water is obtained. The plan to get this additional water was shown on the last page.

Probably the largest single piece of irrigated land is in the Imperial Valley. A system of canals has been put in that spreads in every direction. The desert has been changed into good farm land by this water. More than a half million acres of vegetables and other crops are being grown.

Another large irrigated area is near Fresno in the San Joaquin Valley. Hundreds of thousands of acres of dry land have been reclaimed. In fact you will notice that most of the valley land of the state has certain parts under irrigation.

There is a great advantage to the farmer in getting his water by simply turning a handle. He does not have to depend on rain which often fails to come when it is most needed. He can turn the water off when his crops have had just the correct amount. It saves water and is good for the crops. How much better this is than to let the precious rain run off to the sea. By holding water in reservoirs it is beautiful as well as useful. California may well be proud of its irrigation development.

If you look at the rainfall map (page 18) again you will see that nearly all of the irrigated lands are in regions of light rainfall. The deserts of the state can be made into fertile land by the use of water. It is hoped that the Colorado River Aqueduct will bring all the water needed for this purpose.



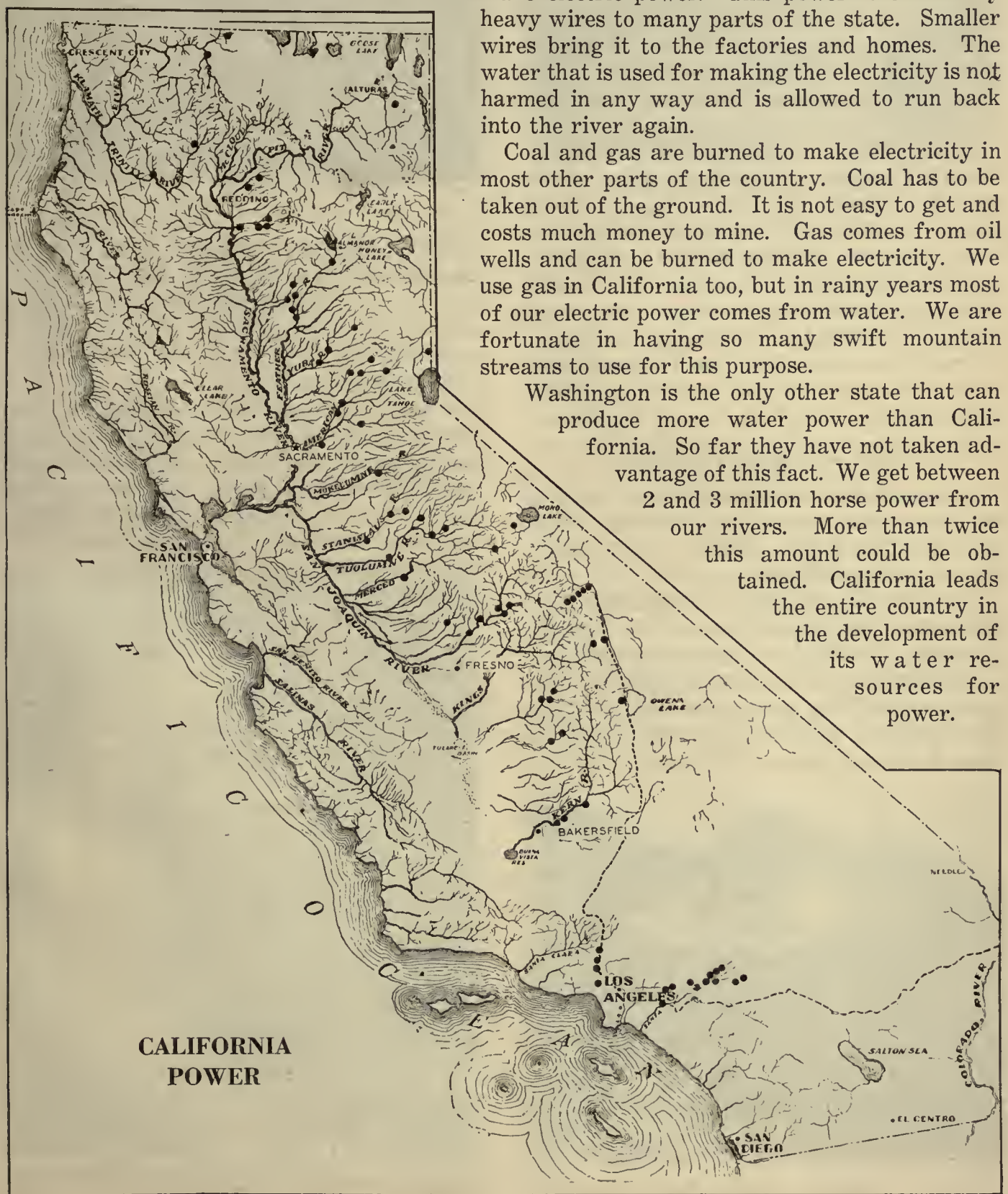
Did you know that the rivers of California are used to make most of our electricity? Water gives us the power to run our factories and light our houses.

The many black dots on the map show us where the houses are built that turn the power of water into electricity. We have more of them than any other state.

Have you ever watched a windmill turning in the breeze? Can you imagine how fast it would fly around if a stream of water was thrown against it from a big fire hose? We get our electricity in much the same way. The rushing mountain streams are made to turn great machines that make electric power. This power is carried by heavy wires to many parts of the state. Smaller wires bring it to the factories and homes. The water that is used for making the electricity is not harmed in any way and is allowed to run back into the river again.

Coal and gas are burned to make electricity in most other parts of the country. Coal has to be taken out of the ground. It is not easy to get and costs much money to mine. Gas comes from oil wells and can be burned to make electricity. We use gas in California too, but in rainy years most of our electric power comes from water. We are fortunate in having so many swift mountain streams to use for this purpose.

Washington is the only other state that can produce more water power than California. So far they have not taken advantage of this fact. We get between 2 and 3 million horse power from our rivers. More than twice this amount could be obtained. California leads the entire country in the development of its water resources for power.



In California when rivers are needed we build them. Some of our large cities have grown so fast that it has been necessary to bring water to them from great distances. San Francisco, Oakland and Los Angeles have all found it necessary to bring in additional water from distant points.

The three California aqueducts or man made rivers, as they might be called, are the Hetch-Hetchy, Los Angeles and Colorado River. They will, when completed, cost about 300 million dollars and total some 600 miles in length.

San Francisco is depending on the Hetch-Hetchy Aqueduct to take care of its water needs for a great many years to come. It will bring enough clear, cold water from the melted snows of the High Sierras to take care of the needs of 4 million people.

Opposite San Francisco lie the great cities of Oakland, Berkeley and Alameda. High up on the Mokelumne River the Pardee Reservoir has been built to save water for this part of California.

The Los Angeles Aqueduct

The Los Angeles Aqueduct carries water to the Los Angeles area from the Owens Valley some 250 miles away. The story of its building is most interesting.

For years the people of Los Angeles used the water from the river that flows through its center. In 1890 Los Angeles remained but a country town of 50 thousand people. The Los Angeles River carried enough water in years of good rainfall to take care of about 5 times this many people. Then came the big

Huge Pipes Carry the Water

Power Houses Change the Power of Water Into Electricity

gain in population. By 1905, just 15 years later, the city had grown so fast that it had to have more water. Several years of light rainfall had given cause for worry. Experts were sent out to see if a new lake or river could be discovered.

It took many months of planning and nundreds of miles of careful searching before a further supply could be found. The Los Angeles Aqueduct was built. The water of the Owens River was run through canals, tunnels and pipes and finally into the city itself.

Thousands of workmen labored many years to build this aqueduct. The 250 miles to be covered led through deserts and mountains. The men labored in the blazing heat of the deserts in summer and the freezing cold of the mountains in the winter. Tunnels had to be bored, ditches dug and pipes laid.

When the aqueduct was finally completed Los Angeles thought that there would never again be a shortage of water. No one dreamed that nearly a million people would move to the city within the next 20 years. The aqueduct which was built to take care of 2 million people was found to be too small. It was necessary to vote money to increase its size so that more water could be carried. Plans for building the Colorado River Aqueduct were already under way but the city could not wait.

It is now believed that the Los Angeles water problem is solved. It is hoped that the larger Los Angeles Aqueduct and the Colorado River Aqueduct will bring Southern California all the water that it will ever need.

Electric Power In Los Angeles

Los Angeles is about 3000 feet lower than Owens Valley. The aqueduct water when it reaches the city has fallen this distance. It has the power to turn heavy machinery and in this way produce electricity. A number of buildings (power plants or generating stations), owned by the city, are changing this water power into electric power in Los Angeles. The Department of Water and Light of Los Angeles which brings the city water and a part of its electric power supply, is the largest of its kind in the world.

Big Creek, in the mountains, north of Los Angeles also produces electric power which is used in the district.

Large steam plants in Long Beach, Pasadena and North Hollywood produce electric power in the Los Angeles district.

Power in the San Francisco District

San Francisco and the cities around the Bay are also well supplied with electric power. San Francisco gets its power from 36 water power and 12 steam power plants. One of the two companies serving the city is the fourth largest in the United States.

While a Dam Is Being Built the Course of the River is Changed—We See Here How the Finished Dam Looks Before the Water is Turned Back

Courtesy Los Angeles Chamber of Commerce

This Dam Was Used for Two Purposes

The Colorado River Aqueduct

The Hoover Dam will hold back the water of the Colorado River. This river forms the south-eastern boundary of California separating the state from Arizona. (See map on Page 16.

The Colorado is the third largest river in the United States. It flows for 1700 miles through 2 countries and 7 states. In northern Arizona and Nevada it is very narrow where it cuts through the mountains. In lower California high banks have been built to hold it on its course when flood conditions arise. In places the banks have been raised so high that the surface of the river is above the ground. The farmers in Imperial Valley have always feared the Colorado. In times of flood during the rainy season the river rises and in places overruns its banks and causes great damage. Hoover Dam will do away with this danger. It will hold back enough water to form a mighty lake. The amount of water that flows down the river can be controlled. The aqueduct, which will draw off water for Southern California, will be some 70 miles below the dam.

It is known that the dam and aqueduct will make it possible to develop a great amount of electric power. The sale of this electricity will help to pay back the cost of construction. Los Angeles will be a large buyer. Its use of power increased 7 times over in the 10 years between 1917 and 1927. At the same rate of gain it will soon need this new supply.

When the dam and aqueduct are finished there should be electric power for every purpose.

It has been said that there are nearly 10 thousand lakes in California. They are mostly small hollow places that catch and hold the melted ice and snow from the mountains. The larger lakes of the state are shown on the map.

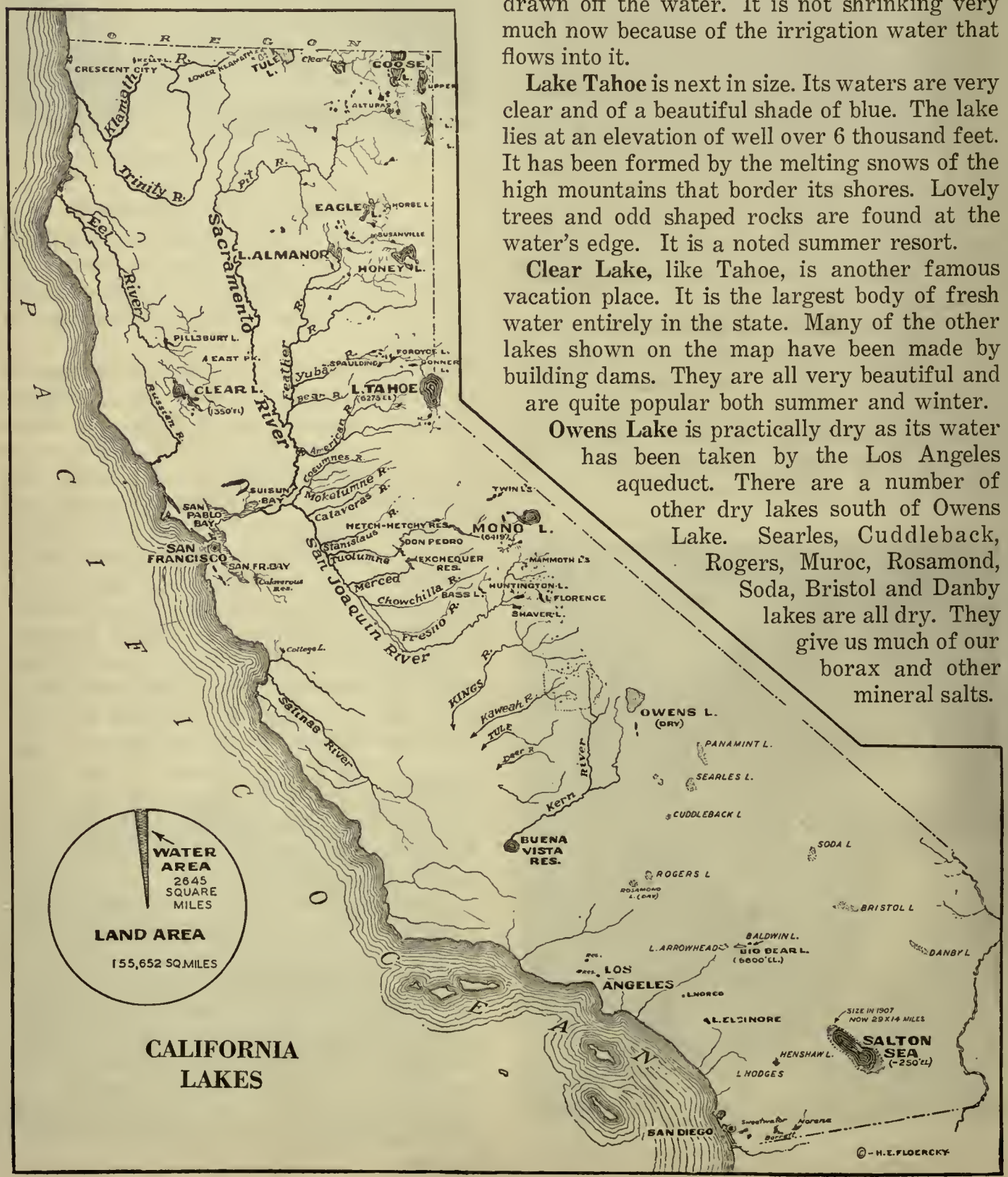
The **Salton Sea** contains the most water. It was formed by the overflow of the Colorado River 27 years ago.

A great deal of time and money was needed to get the Colorado back on its course. The water settled in the lowest spot of the valley. Its surface was nearly 200 feet below the surface of the Pacific Ocean in 1907. In 1921 it was 250 feet below. The hot desert sun had drawn off the water. It is not shrinking very much now because of the irrigation water that flows into it.

Lake Tahoe is next in size. Its waters are very clear and of a beautiful shade of blue. The lake lies at an elevation of well over 6 thousand feet. It has been formed by the melting snows of the high mountains that border its shores. Lovely trees and odd shaped rocks are found at the water's edge. It is a noted summer resort.

Clear Lake, like Tahoe, is another famous vacation place. It is the largest body of fresh water entirely in the state. Many of the other lakes shown on the map have been made by building dams. They are all very beautiful and are quite popular both summer and winter.

Owens Lake is practically dry as its water has been taken by the Los Angeles aqueduct. There are a number of other dry lakes south of Owens Lake. Searles, Cuddleback, Rogers, Muroc, Rosamond, Soda, Bristol and Danby lakes are all dry. They give us much of our borax and other mineral salts.



Why is the climate hotter in the upper part of the Sacramento Valley than it is along the coast in the southern part of the state? Why is the temperature higher at Redding than it is at San Diego? Redding is 500 miles north of San Diego and might be expected to be much cooler. Our mountain maps have given us the answer. Redding is kept warm by the mountains that surround it. Wherever the mountains hold back the ocean breeze in California the temperature rises.

A temperature between 65 and 75 degrees is a very comfortable one in which to live. We do not start to feel cold until the thermometer gets below 60. Nor do we complain much about the heat until it starts to go higher than 80. The temperatures shown on the map are what we call averages. The large figures are for the whole year, winter and summer, day and night. All of the temperatures taken are added together and then are divided by the number of readings made during the year. Our nights are always cool in California. This makes the average lower.

You will notice that the temperature of San Francisco changes less than 9 degrees between January and July. Washington, on the east coast, has a difference of 43½ degrees. Neither city is more than a few miles north or south of the other.

Our winds come from the sea. The temperature of the water in the Pacific Ocean does not change much during the year. It is never very cold. The ocean breeze gets its temperature from the water over which it passes. This is the reason for our good climate.

Do you know why the temperature of Stockton is lower than Fresno or Redding? Is there a break in the mountains?

COMPARATIVE TEMPERATURES (30 YEAR AVER.)	YEAR	JAN.	JULY
TRENTON-N.J.	52.5	30.5	74.5
EUREKA-CALIF.	51.6	46.9	55.5
WASHINGTON-D.C.	55.0	33.4	76.8
SAN FRANCISCO-	56.1	49.9	58.5
CHARLESTON-S.C.	66.0	49.9	81.4
SAN DIEGO	61.0	54.3	67.2
MIAMI-FLORIDA-	74.4	66.5	81.0

CALIFORNIA TEMPERATURES

LEGEND
Small Figures—Night and day average.
Large Figures—yearly average.

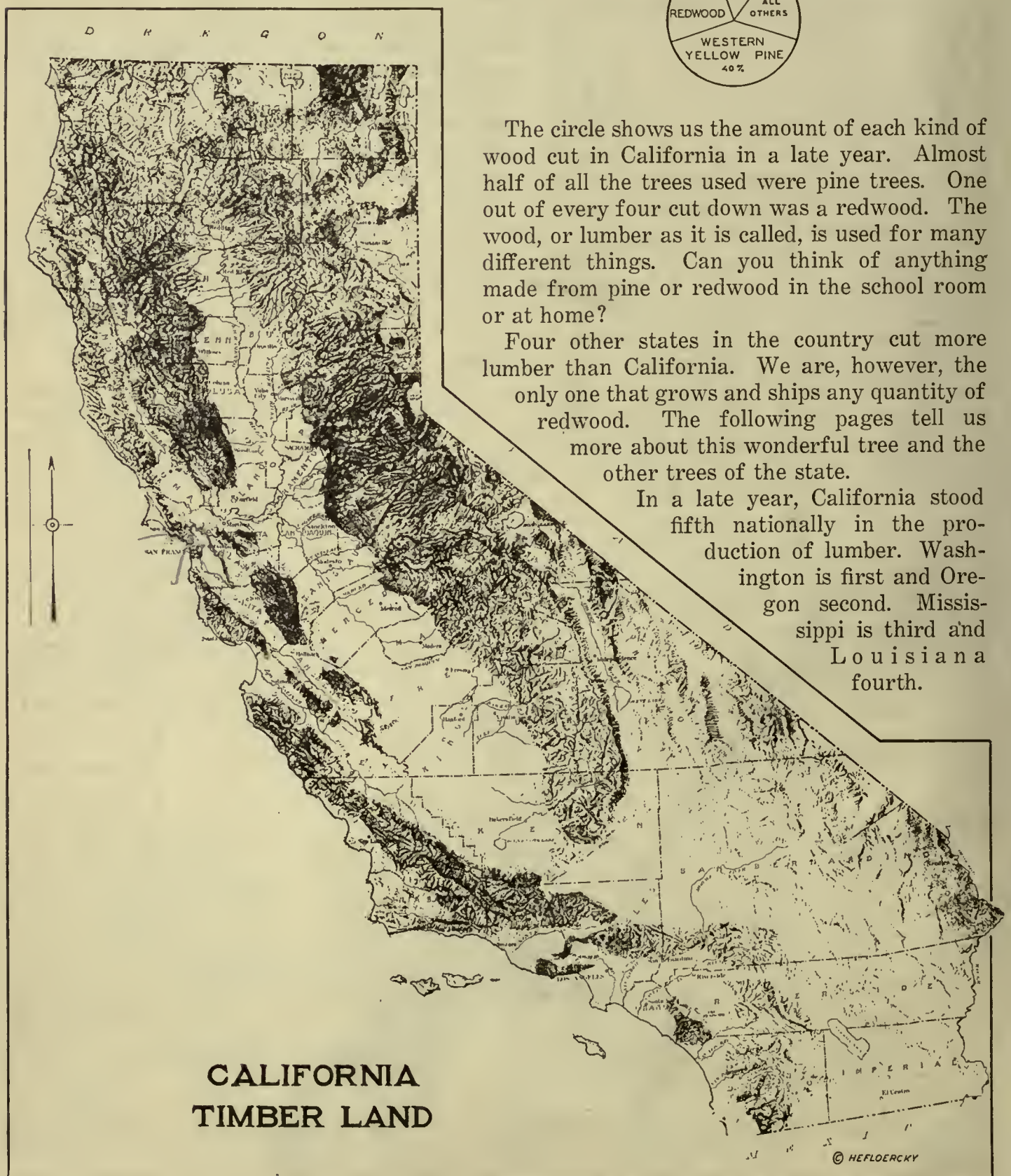
Trees are very necessary in this world. A country without trees is not a very good place in which to live. We are fortunate in having many great forests in this state.

The dark parts of the map on this page shows the forest lands of California. You will notice that some of the mountains are without trees. Where there is little or no rain, trees will not grow. The heaviest growth is in the upper Coast Range and the highest of the Sierra Nevada Range.

The circle shows us the amount of each kind of wood cut in California in a late year. Almost half of all the trees used were pine trees. One out of every four cut down was a redwood. The wood, or lumber as it is called, is used for many different things. Can you think of anything made from pine or redwood in the school room or at home?

Four other states in the country cut more lumber than California. We are, however, the only one that grows and ships any quantity of redwood. The following pages tell us more about this wonderful tree and the other trees of the state.

In a late year, California stood fifth nationally in the production of lumber. Washington is first and Oregon second. Mississippi is third and Louisiana fourth.



Can you imagine anything that has lived for thousands of years? We are told by those that know that some of our big trees are 3 and 4 thousand years old. They were very old even as far back as the days of Columbus and Cabrillo.

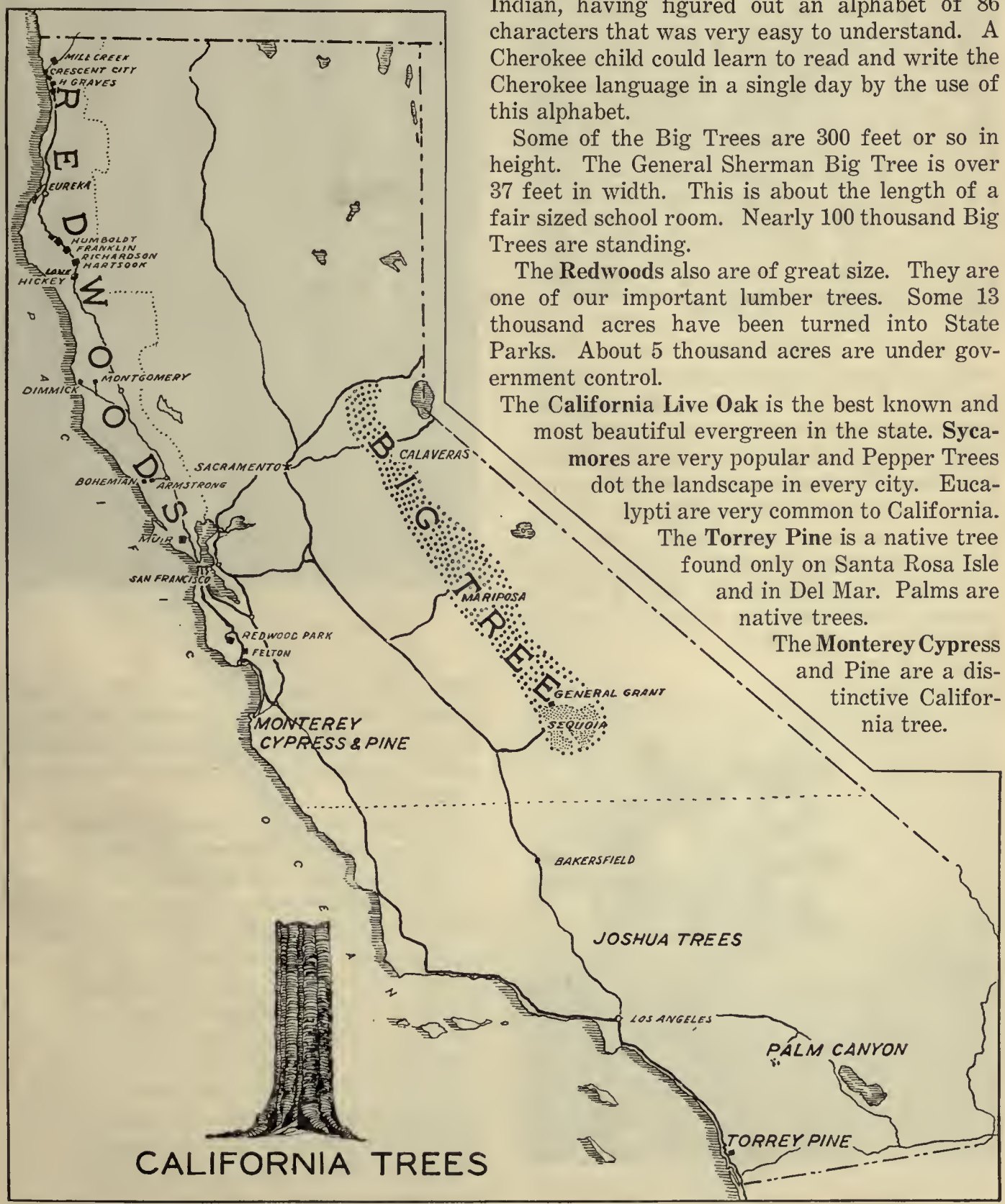
The map shows us the location of most of California's famous trees. You will notice that the Big Tree is found only in the Sierras while the Redwood grows along the Coast. They both belong to the same family called Sequoia. This name was taken from a Cherokee Indian who spelled it Se-quo-yah. He was a very remarkable Indian, having figured out an alphabet of 86 characters that was very easy to understand. A Cherokee child could learn to read and write the Cherokee language in a single day by the use of this alphabet.

Some of the Big Trees are 300 feet or so in height. The General Sherman Big Tree is over 37 feet in width. This is about the length of a fair sized school room. Nearly 100 thousand Big Trees are standing.

The **Redwoods** also are of great size. They are one of our important lumber trees. Some 13 thousand acres have been turned into State Parks. About 5 thousand acres are under government control.

The **California Live Oak** is the best known and most beautiful evergreen in the state. **Sycamores** are very popular and Pepper Trees dot the landscape in every city. Eucalypti are very common to California. The **Torrey Pine** is a native tree found only on Santa Rosa Isle and in Del Mar. Palms are native trees.

The **Monterey Cypress** and Pine are a distinctive California tree.



Natural Resources

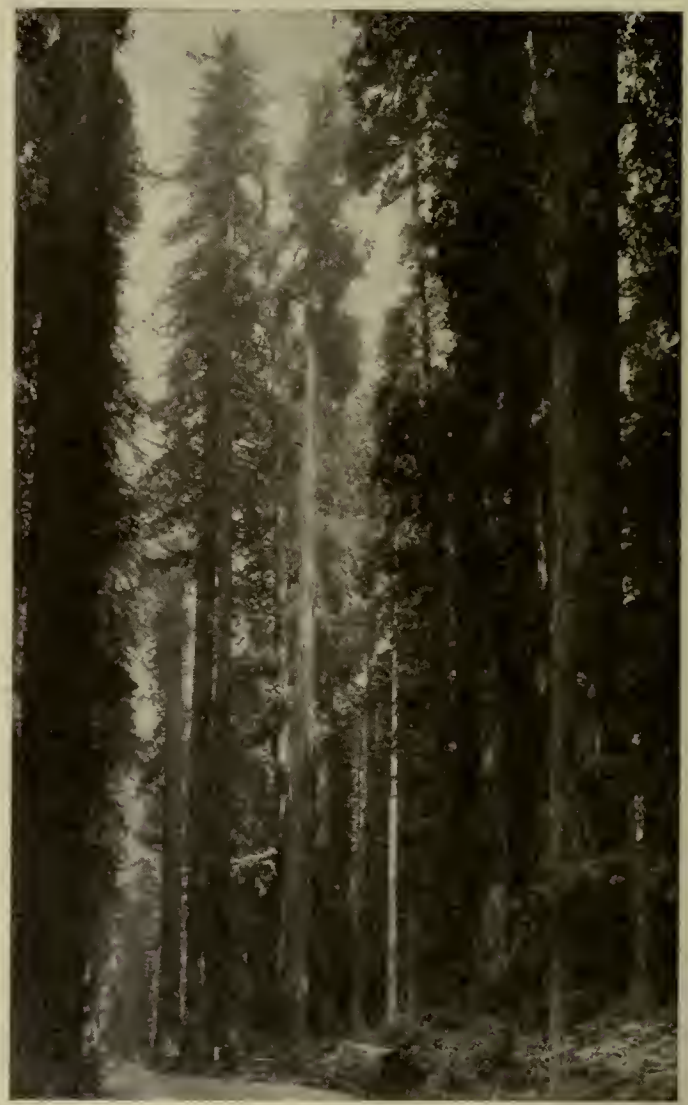
Nature has been very kind to the people of California. The state has many natural resources.

Natural resources are things that have always been with us. Things that can be used when we want them. A resource can no longer be called by this name if it has been used up or wasted. The water in our lakes and rivers is a natural resource. So are our trees. Oil, coal and other minerals are natural resources, as are our animals and fish. They were all here when we came and it would be selfish indeed to help ourselves and leave nothing for the people who will follow us. To save our natural resources is called "conservation." You will see later on in this book, how conservation of natural resources is being carried on in California.

Forest Fires

The damage to animal and bird life from forest fire is very great. When flames sweep through the forest their homes are destroyed. Often the bird or animal itself is trapped by the flames. Streams dry up and fish disappear. A match or cigarette carelessly thrown from a passing car may cause a great loss. Fire records show that more than 600 thousand acres are burned each year. It is very necessary that everyone should be careful not to start a forest fire.

Courtesy Los Angeles Chamber of Commerce
A Joshua Tree in the Mojave Desert



Redwood Empire Association
Giant Trees Along the Redwood Highway

Flowers

Flowers are raised commercially in California in ever increasing numbers. San Mateo County has 300 acres of chrysanthemums and asters, 40 acres of violets and 10 acres of roses under glass.

Hundreds of acres of dahlias, nasturtiums and sweet peas are grown in the region south of San Francisco. Los Angeles and San Diego also have a large commercial flower industry.

The California state flower is the poppy, which covers the ground in great waves of golden color each spring. Blue lupines are found in great numbers often making a quiltwork of blue and yellow patches where they grow as neighbors with the poppies.

In several sections the raising of flower seeds has become an important industry. Outside of the large cities it is not unusual to pass immense fields containing acres of plants that have gone to seed.

We cannot keep our cake and eat it too is an old saying. We can have our trees and still cut them down—if we keep planting others to take their places.

A wise government has made it possible for the people of California to save or conserve their forests. They have put aside 18 large pieces of land which are called National Forests. The map gives us the name of each. Land that could not be easily used for farming, land with trees on most of it, was used. Several hundred thousand head of cattle and a half million sheep feed in the valley portions. Young trees are planted as fast as the old trees are cut.

Most of our water comes from the forests of the state. Forests save water by building up the underground supply. This is the water that stays in the ground far below the surface. Trees shade the winter snows from the sun. Instead of melting and running off into the rivers the snow remains on top of the ground for a longer period.

Forests protect the soil and conserve the rain water for use in the dry season. The network of roots, the dead leaves, twigs and needles under the trees prevent the water from running off too rapidly and allow it to seep slowly into the soil.

In many parts of the state, we have floods in early spring. If the sides of the mountains are bare, the spring rains melt the snow rapidly. The water flows down in great quantities causing the floods. The forests hold back the water, prevent dangerous floods and save the water for use in the summer time.

The greatest enemy of the forest is fire. In 1932, the estimated loss from forest fires in California was over three million dollars.

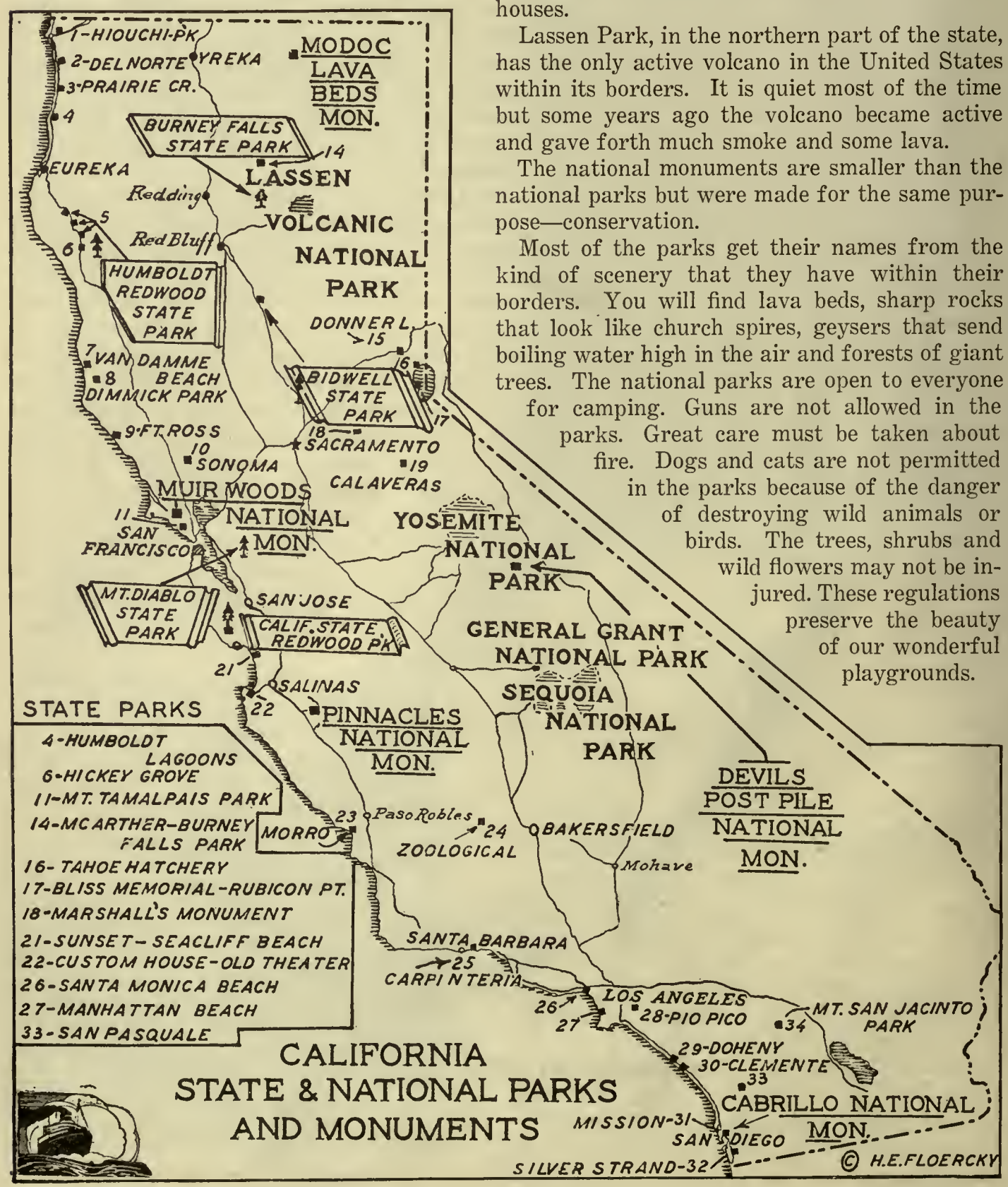
California is fortunate in having a large number of city, county, state and national parks. They are mostly places of great beauty that have been set aside for the use of our people. The map on this page shows the state and national parks.

Yosemite Park is the largest and best known. It is a lovely valley of big trees, huge rocks and wonderful falls. Sequoia and General Grant Parks are the real home of the big trees. Many of the groves in other parts of the state could be dropped into Sequoia and no one but the forest rangers would know that they had arrived. The General Sherman tree, which is the largest, has enough wood in it to build 500 five-room houses.

Lassen Park, in the northern part of the state, has the only active volcano in the United States within its borders. It is quiet most of the time but some years ago the volcano became active and gave forth much smoke and some lava.

The national monuments are smaller than the national parks but were made for the same purpose—conservation.

Most of the parks get their names from the kind of scenery that they have within their borders. You will find lava beds, sharp rocks that look like church spires, geysers that send boiling water high in the air and forests of giant trees. The national parks are open to everyone for camping. Guns are not allowed in the parks. Great care must be taken about fire. Dogs and cats are not permitted in the parks because of the danger of destroying wild animals or birds. The trees, shrubs and wild flowers may not be injured. These regulations preserve the beauty of our wonderful playgrounds.



Tourists, people from outside of California are surprised when told that they can ride in a few hours from a dip in the ocean to an ice-skating party or snow-ball game. Yet this is true.

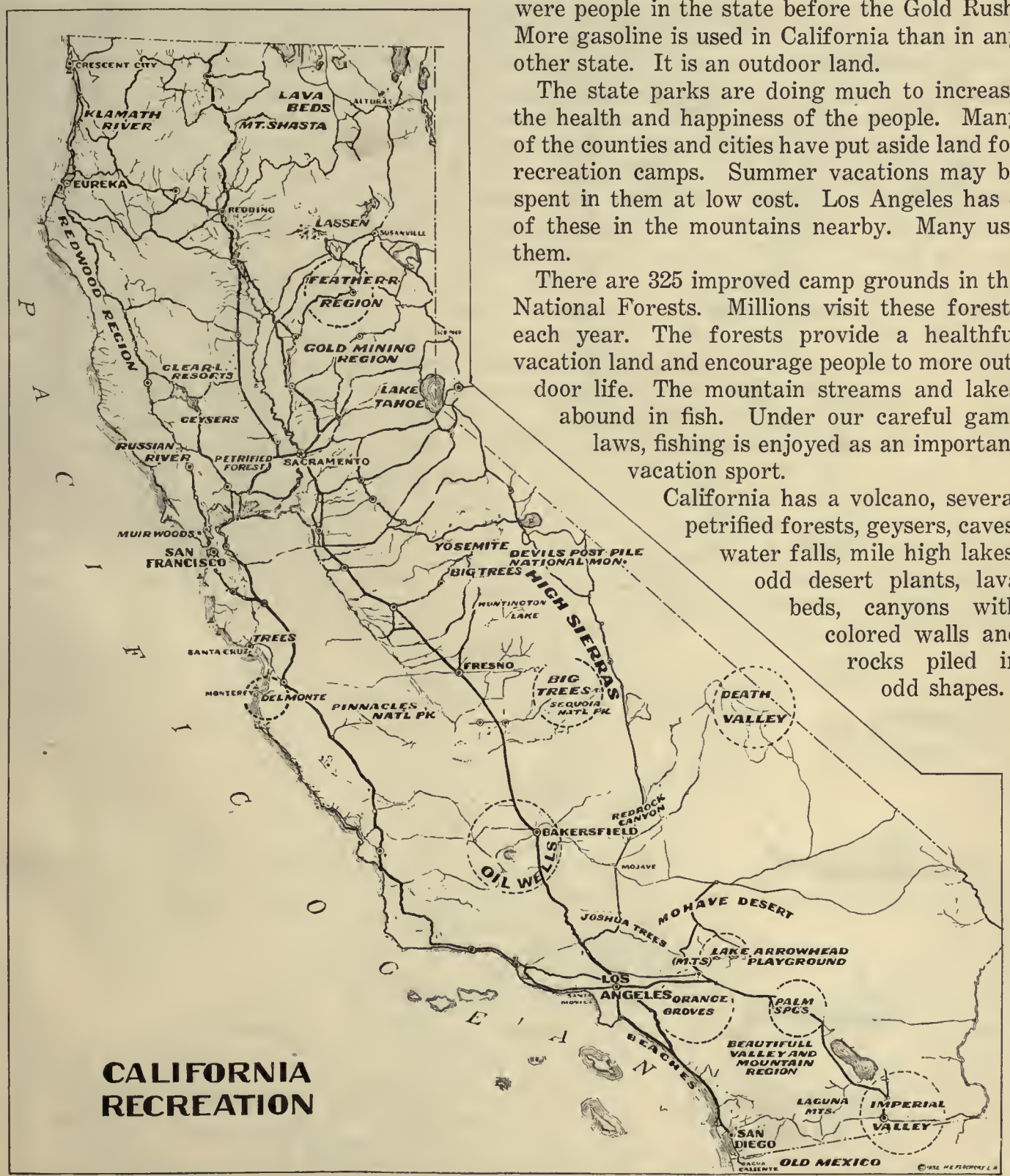
Every kind of outdoor climate and scenery may be found in the state. The map on this page gives some of the better known places and things to see. The lines between are the highways. Only a few are shown. Almost all of the roads are paved. This makes it easy for people to drive about and see and do things.

Millions and millions of dollars are spent in California each year by the tourists. In July, 1932, nearly 50 thousand cars came into the state. This is as many automobiles as there were people in the state before the Gold Rush. More gasoline is used in California than in any other state. It is an outdoor land.

The state parks are doing much to increase the health and happiness of the people. Many of the counties and cities have put aside land for recreation camps. Summer vacations may be spent in them at low cost. Los Angeles has 4 of these in the mountains nearby. Many use them.

There are 325 improved camp grounds in the National Forests. Millions visit these forests each year. The forests provide a healthful vacation land and encourage people to more outdoor life. The mountain streams and lakes abound in fish. Under our careful game laws, fishing is enjoyed as an important vacation sport.

California has a volcano, several petrified forests, geysers, caves, water falls, mile high lakes, odd desert plants, lava beds, canyons with colored walls and rocks piled in odd shapes.



CALIFORNIA RECREATION

The sardine is small in size but great in value. During certain years it brings us more gold than we take out of all the gold mines in the state. Sardines are caught with nets in the dark of the moon. The fishing boats work the coast waters around Monterey, San Pedro and San Diego.

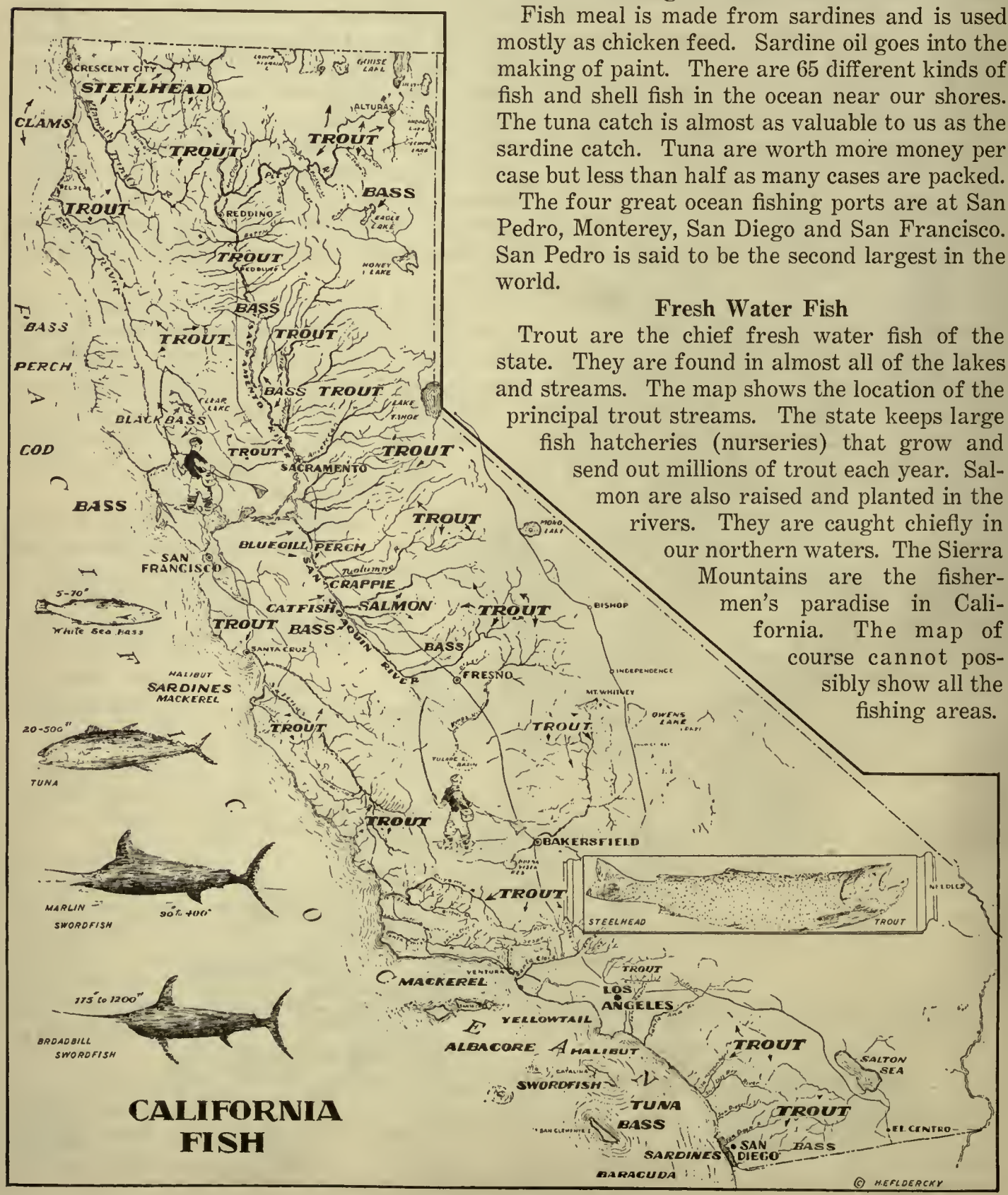
Our records show that hundreds of millions of sardines or pilchards which is their real name, are taken from the Pacific Ocean each year. In 1929 the fishermen sold them for a million dollars more than the gold miners received for all the gold recovered. Over 4 million cases of sardines were put up that year, half of which were shipped to some 53 foreign countries.

Fish meal is made from sardines and is used mostly as chicken feed. Sardine oil goes into the making of paint. There are 65 different kinds of fish and shell fish in the ocean near our shores. The tuna catch is almost as valuable to us as the sardine catch. Tuna are worth more money per case but less than half as many cases are packed.

The four great ocean fishing ports are at San Pedro, Monterey, San Diego and San Francisco. San Pedro is said to be the second largest in the world.

Fresh Water Fish

Trout are the chief fresh water fish of the state. They are found in almost all of the lakes and streams. The map shows the location of the principal trout streams. The state keeps large fish hatcheries (nurseries) that grow and send out millions of trout each year. Salmon are also raised and planted in the rivers. They are caught chiefly in our northern waters. The Sierra Mountains are the fishermen's paradise in California. The map of course cannot possibly show all the fishing areas.



Suppose that we were to tell you that more than 6 thousand mountain lions (cougars) had been killed in California during the past 20 years? This statement seems hard to believe but it really is a fact. The state pays from 20 to 30 dollars for each lion caught. The mountain lions very seldom harm people but feed on deer, goats and sheep. A full grown lion will kill a thousand dollars worth of these animals in a year. It is good business for the state to offer a bounty for their capture.

The sale of licenses which allow hunters to shoot deer and other game amounts to about half a million dollars each year. Deer meat or venison as it is called, is very good to eat. We have so many thousand deer in our forests that it does no harm to kill a certain number each season.

The state has 39 game refuges where animals are given every protection. No hunting is allowed on this land.

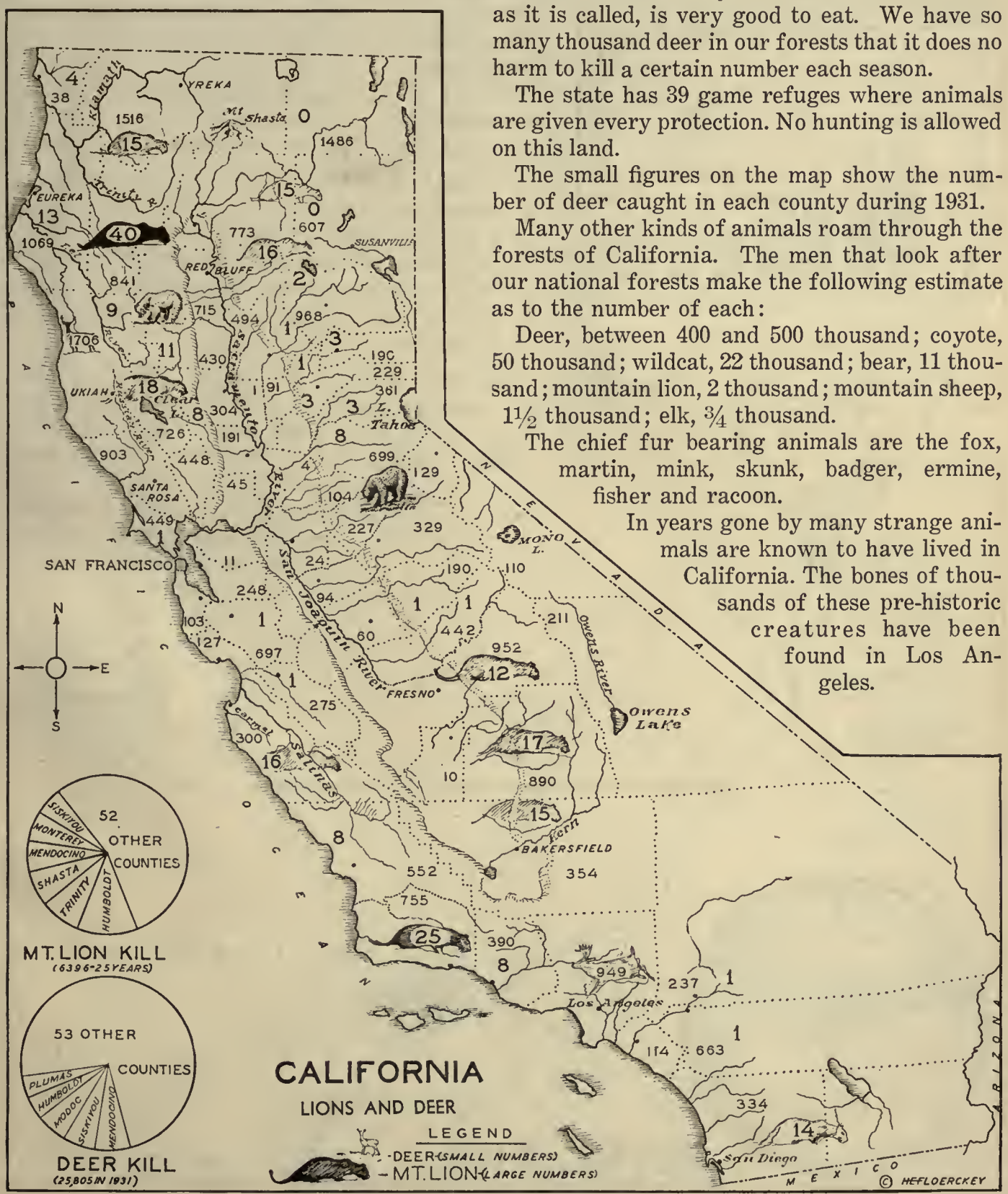
The small figures on the map show the number of deer caught in each county during 1931.

Many other kinds of animals roam through the forests of California. The men that look after our national forests make the following estimate as to the number of each:

Deer, between 400 and 500 thousand; coyote, 50 thousand; wildcat, 22 thousand; bear, 11 thousand; mountain lion, 2 thousand; mountain sheep, 1½ thousand; elk, ¾ thousand.

The chief fur bearing animals are the fox, martin, mink, skunk, badger, ermine, fisher and racoon.

In years gone by many strange animals are known to have lived in California. The bones of thousands of these pre-historic creatures have been found in Los Angeles.



California has a population of more than 5½ million people. This number would fill one of our big college grand stands about 60 or 70 times. The population grew 4 times as fast as the rest of the United States between 1920 and 1930.

Nearly half of the people living in the 11 western states of the United States are in California. Two out of every three persons on the Pacific Coast live in the state.

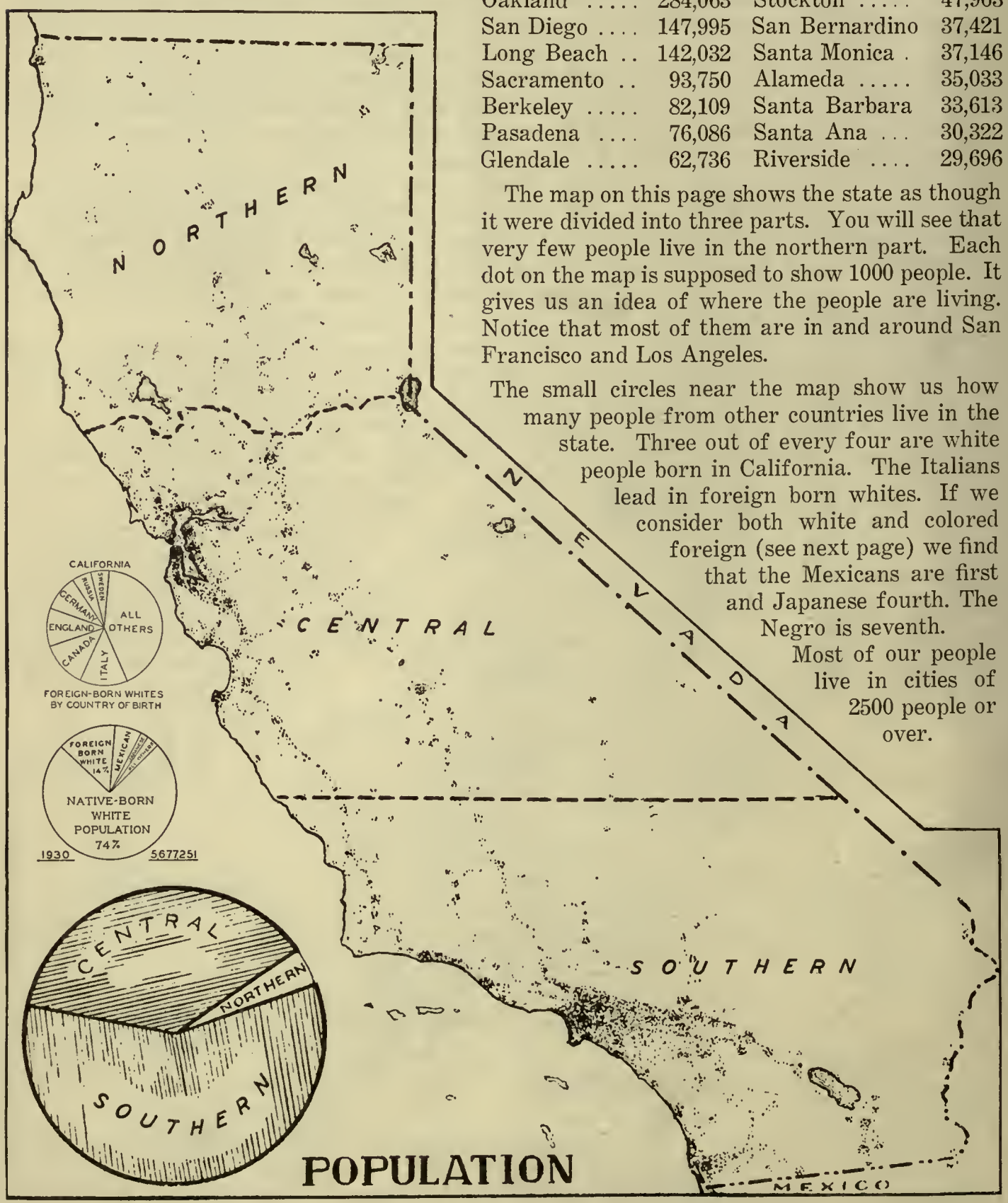
The population of the leading cities is as follows:

Los Angeles	1,238,048	San Jose	57,651
San Francisco	634,394	Fresno	52,513
Oakland	284,063	Stockton	47,963
San Diego	147,995	San Bernardino	37,421
Long Beach	142,032	Santa Monica	37,146
Sacramento	93,750	Alameda	35,033
Berkeley	82,109	Santa Barbara	33,613
Pasadena	76,086	Santa Ana	30,322
Glendale	62,736	Riverside	29,696

The map on this page shows the state as though it were divided into three parts. You will see that very few people live in the northern part. Each dot on the map is supposed to show 1000 people. It gives us an idea of where the people are living. Notice that most of them are in and around San Francisco and Los Angeles.

The small circles near the map show us how many people from other countries live in the state. Three out of every four are white people born in California. The Italians lead in foreign born whites. If we consider both white and colored foreign (see next page) we find that the Mexicans are first and Japanese fourth. The Negro is seventh.

Most of our people live in cities of 2500 people or over.



There are 58 counties in the state. San Bernardino is the largest. It is over 20 thousand square miles. This is equal in size to the states of Rhode Island, Delaware, Connecticut, Massachusetts and part of Vermont. The smallest county is San Francisco. The city and county of San Francisco occupy the same area—42 square miles.

Los Angeles County has the largest population, about 2¼ million people. This is greater than the population of Vermont, Delaware, New Hampshire, Idaho, New Mexico and Wyoming combined. The county with the smallest number of people is Alpine. It had but 241 in 1930.

Courtesy State Chamber of Commerce

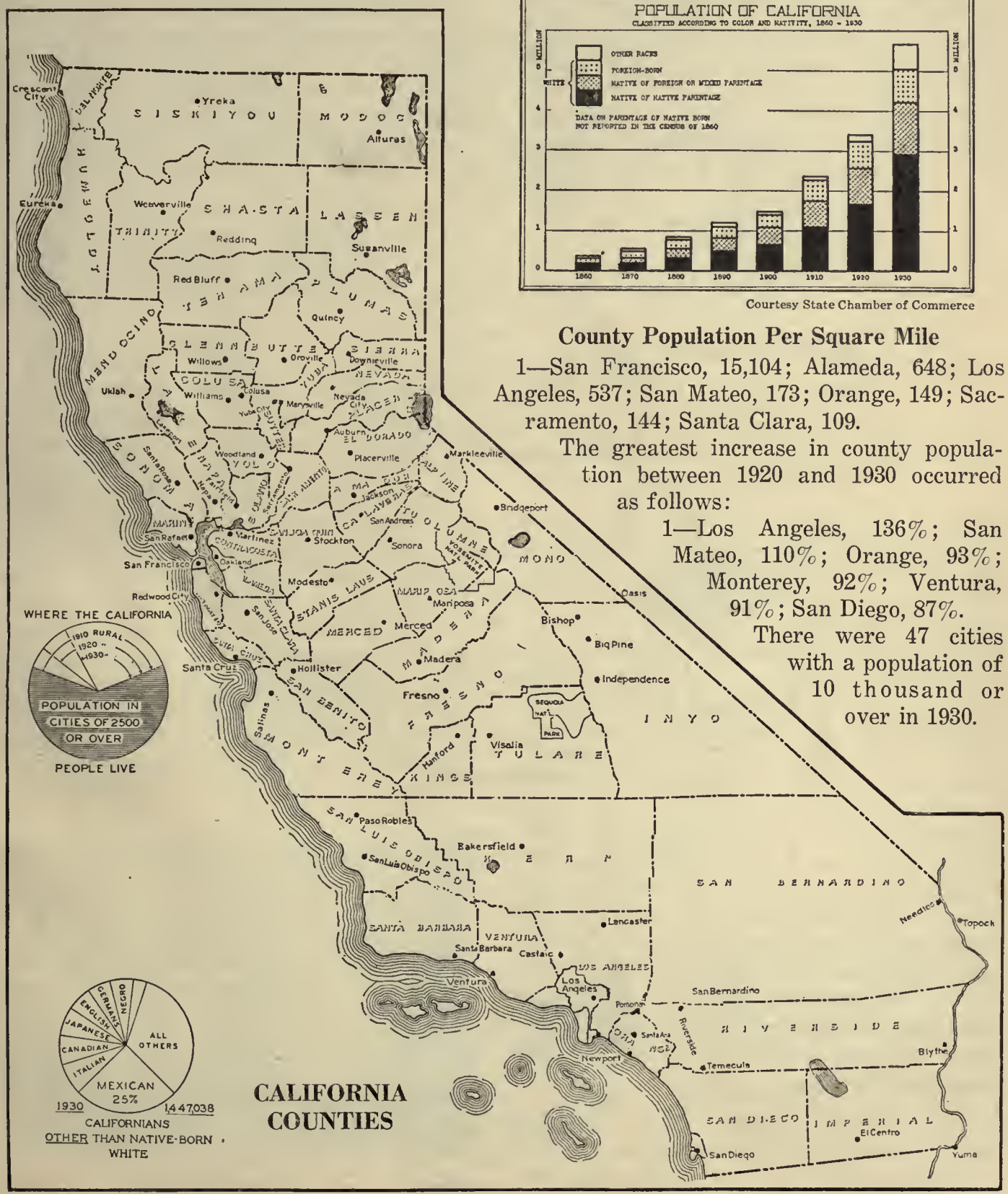
County Population Per Square Mile

1—San Francisco, 15,104; Alameda, 648; Los Angeles, 537; San Mateo, 173; Orange, 149; Sacramento, 144; Santa Clara, 109.

The greatest increase in county population between 1920 and 1930 occurred as follows:

1—Los Angeles, 136%; San Mateo, 110%; Orange, 93%; Monterey, 92%; Ventura, 91%; San Diego, 87%.

There were 47 cities with a population of 10 thousand or over in 1930.

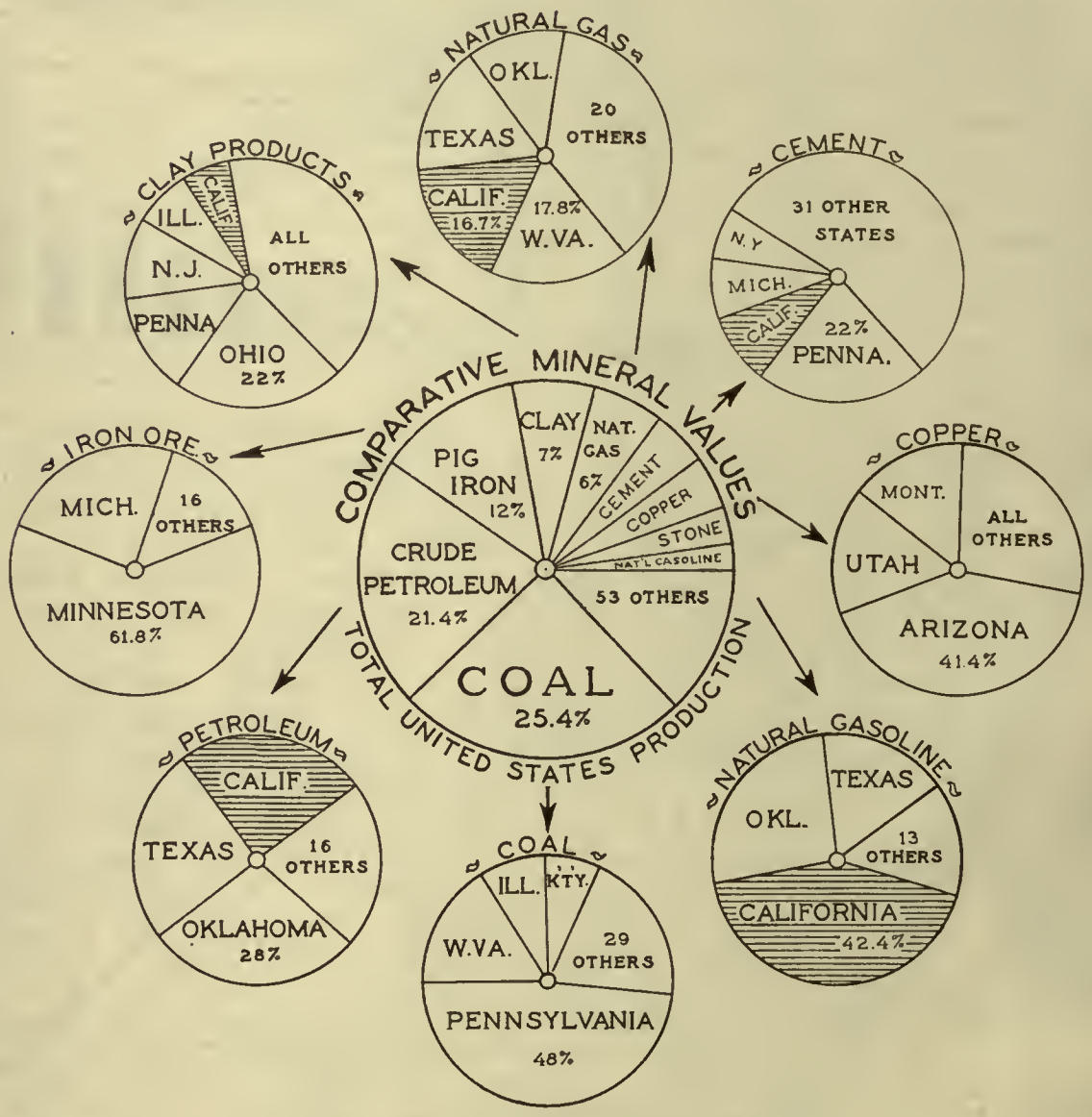


The average value of **Mineral Products in the United States** for the 7-year period—1924-30 inclusive—was 5½ billion dollars. California with 1/20 of the land area produced about 1/12 of the total.

Pennsylvania stood first because of her 650 million dollar coal production. This one mineral amounts to ¼ of all the minerals in value.

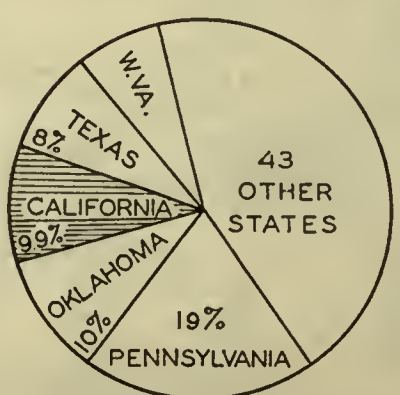
Oklahoma with but 23 different minerals ranks second on account of 450 million dollars in oil products, zinc, worth 25 million being second.

California with more minerals (54) than any other state leads in borates, chromite, diatomite, gold, marl, mercury, natural gasoline, potassium and sodium salts.



Comparative Value of All the Minerals in the United States

The circles show the mineral values over a 7-year period. California ranked second in quantity of oil produced although in value it stood in third place.



State Position in Minerals

Pennsylvania coal had a higher value than all of the 54 minerals mined in California.

Copper led cement in late years. In the 7-year period cement was ahead.

Many of the things that we see and use daily around our homes are taken from the earth in different parts of California. Our very houses themselves are likely to be made from stone, brick, cement and tile found nearby. The salt, soda and bottled mineral water, face and cleaning powders, soap and toothpaste may be taken or made from the ground within a few miles of some of our readers.

These and dozens of other articles are mined in our state. They do not grow from anything that we have planted, like wheat or cotton. They were formed or made many, many years ago. They are natural resources.

We divide the minerals into 3 groups:

Fuels—Metals—Non-Metals

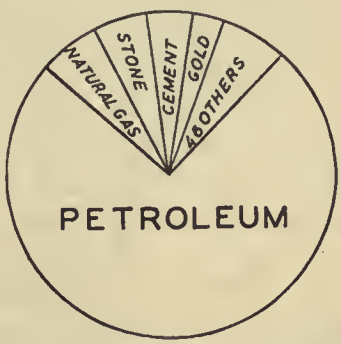
The fuels are coal, petroleum (oil) and natural gas. They burn when lighted and are used to give us light, heat and power.

Oil

We mine but little coal in the state. Our oil brings in 3 out of every 4 dollars received for all the minerals recovered. This is shown in the circle chart. The oil costs a great deal of money to find and take from the ground. Small holes are made and pipes pushed into them one after another as they grow deeper. Sharp pieces of metal, called drills, turn at great speed in making these holes. The steel or wooden towers that we see in the oil fields are built to handle the long pieces of pipe and the drills as they are raised or lowered. Some oil wells are 2 miles deep. Others only go into the ground a half mile or so, but this may be hard rock all of the way. When no oil is found a great deal of money has been lost. If a lot of oil is brought in the owners become rich.

Oil Wells at Santa Fe Springs

Oil as it comes from the well is a thick, heavy, dark looking liquid. The larger oil companies refine this oil. This means that they change it into a number of lighter oils. Oil is heated in large tanks and the different products are drawn off as its temperature increases. It is not unlike the boiling of water in a tea kettle. We know that a sudden cooling of the steam will turn it to water again. In much the same way gasoline, kerosene and many other like products are made from oil. The circle chart that follows shows us what an important part oil plays in the mineral values of California. Pages 40 and 41 give us more information about our fuels.



Comparative Mineral Values

Metals

The mining history of California began on January 24, 1848, when Marshall discovered gold in a ditch that was being dug near a sawmill that belonged to Johann August Sutter. In the three years that followed California added more than 4 times as much gold to the wealth of the world as had been produced up to that time in the United States.

Copper has been mined in the state for more than 70 years. Up to 1919 it came mostly from Shasta County in the north. Since that year most of it has come from the town of Engels, between Almanor and Honey Lakes.

Other metallic minerals are chiefly quicksilver, silver, lead and zinc. Page 42 shows where these metals are found in the state. Silver is usually found mixed with gold, copper and lead. Zinc and lead and zinc and copper are also mined together. Most of our lead comes from near Owens Lake and the zinc from Shasta County.

Non-Metals

These are mostly building materials such as cement, stone and clay made into brick and tile. Page 43 shows where they are found.

Imagine a railroad train that was made up of one million tank cars filled with oil. It would reach more than a third of the way around the world. We produce between 300 and 400 barrels of oil a minute every day in the year. This will give you an idea of the great quantities of oil in the ground in California. We have been producing it for nearly 60 years. As far back as 1876 some 30 barrels a day were obtained.

Oil was discovered in and around Los Angeles. Some of the first fields brought in at Newhall and Santa Paula are still pumping oil.

Today we get most of our oil from Long Beach, Santa Fe Springs and the country west of Bakersfield. The Kettleman Hills field, which was discovered in 1928, has had a very rapid gain in production. It is said to be one of the greatest oil discoveries made in recent years.

Signal Hill in the Long Beach field is a forest of oil derricks. It is supposed to have produced more oil for a greater length of time than any other field in the country.

The latest machinery for drilling wells has made it possible for wells to be put down nearly two miles in the ground. This has brought in a new supply of oil in many fields.

The producers of California have been conserving oil in the past few years. It is considered good business to leave it in the grounds if more is being produced than can be sold.

Gasoline, kerosine, cleaning fluids and like products are made from oil.

Many countries in the world get their light from lamps that burn California oil.

They are looking for oil in all parts of the state, although the map shows oil fields in 1933.

If your stove is a gas range it is quite likely that it burns gas brought to your house from some distant oil field. Many homes in the larger cities use this gas for heating as well as for cooking. It is also being put into strong metal bottles and sent to far away lands. The people across the Pacific are not able to turn on their gas or electricity whenever they need light. They have few oil wells and in good times are glad to pay us for the gas that we can ship to them.

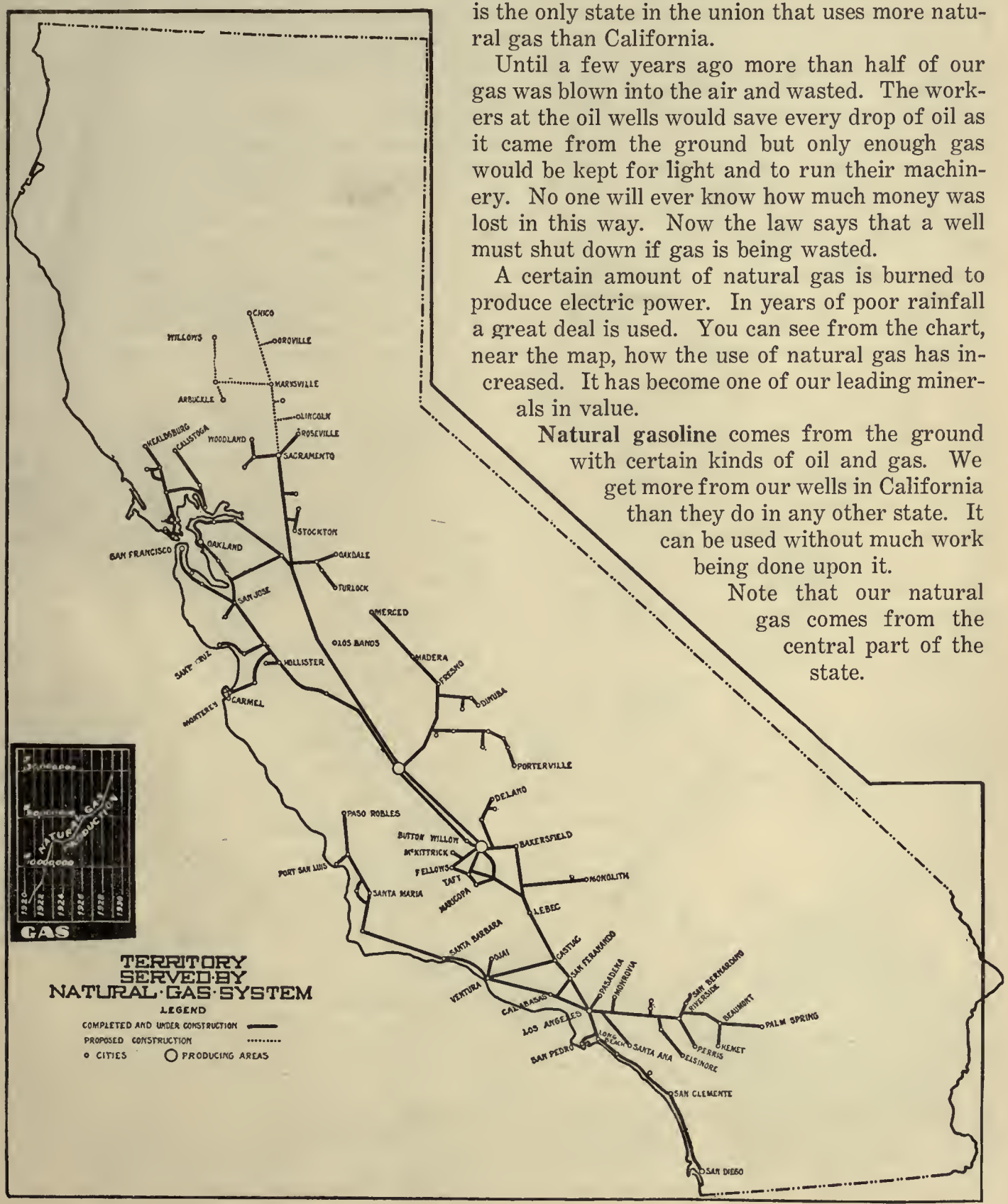
The map shows the pipe lines that carry this gas into so many towns and cities in the state. Texas is the only state in the union that uses more natural gas than California.

Until a few years ago more than half of our gas was blown into the air and wasted. The workers at the oil wells would save every drop of oil as it came from the ground but only enough gas would be kept for light and to run their machinery. No one will ever know how much money was lost in this way. Now the law says that a well must shut down if gas is being wasted.

A certain amount of natural gas is burned to produce electric power. In years of poor rainfall a great deal is used. You can see from the chart, near the map, how the use of natural gas has increased. It has become one of our leading minerals in value.

Natural gasoline comes from the ground with certain kinds of oil and gas. We get more from our wells in California than they do in any other state. It can be used without much work being done upon it.

Note that our natural gas comes from the central part of the state.



Every man, woman and child in California could buy a good second-hand car if all the gold found in the state since 1849 had been evenly divided among them. If one person had all the money that this gold had been turned into he could buy most of the farms of the state. He would be about the richest man in the world.

You will see from the circle chart at the left of the map that gold and copper are the leaders in the metal group. We are first in the United States in our production of gold but stand eighth in copper. They are both mined in the northern part of the state. After the first 10 years the amount of gold found became less each year.

Copper is valued at 5 million dollars in good years.

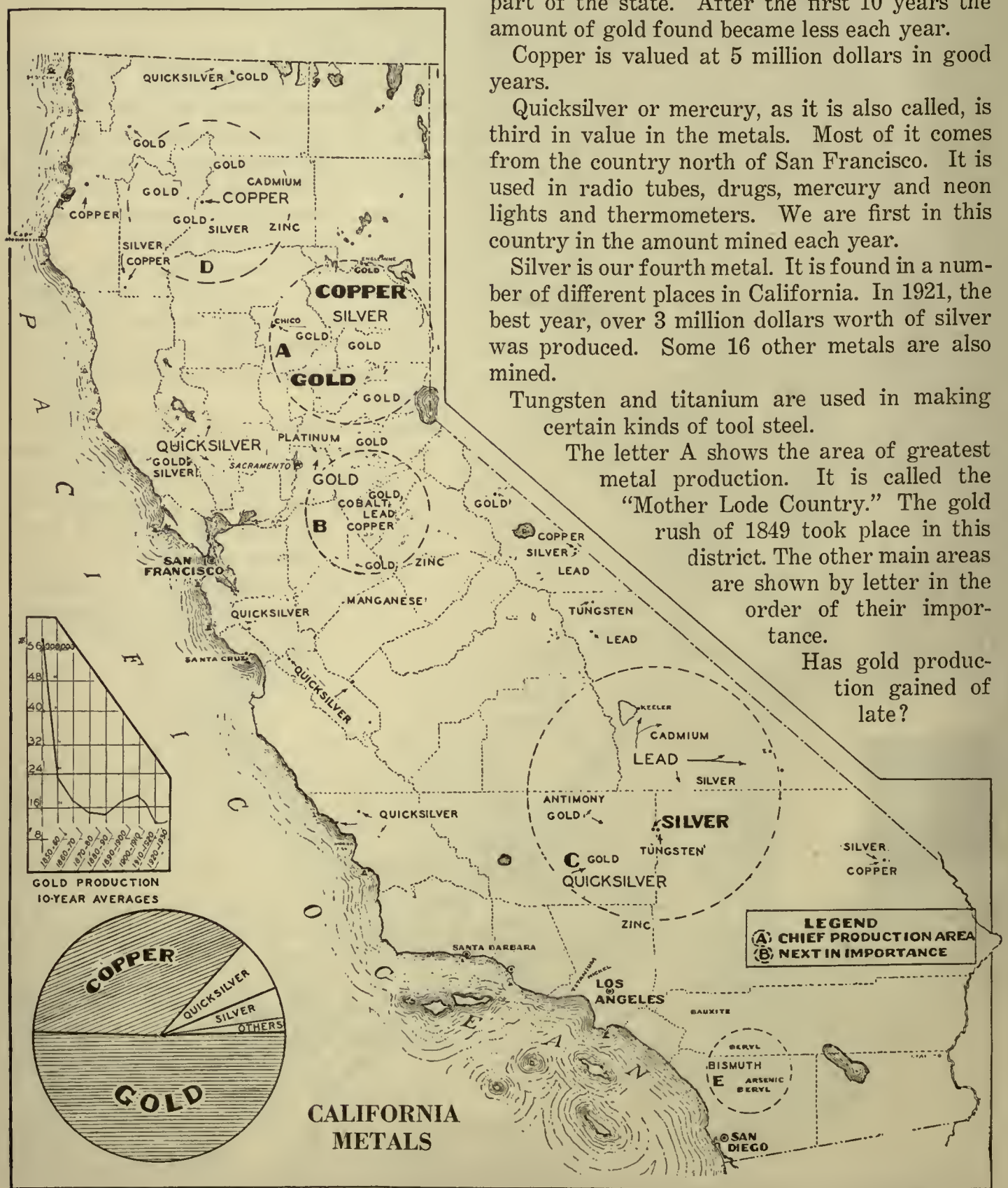
Quicksilver or mercury, as it is also called, is third in value in the metals. Most of it comes from the country north of San Francisco. It is used in radio tubes, drugs, mercury and neon lights and thermometers. We are first in this country in the amount mined each year.

Silver is our fourth metal. It is found in a number of different places in California. In 1921, the best year, over 3 million dollars worth of silver was produced. Some 16 other metals are also mined.

Tungsten and titanium are used in making certain kinds of tool steel.

The letter A shows the area of greatest metal production. It is called the "Mother Lode Country." The gold rush of 1849 took place in this district. The other main areas are shown by letter in the order of their importance.

Has gold production gained of late?

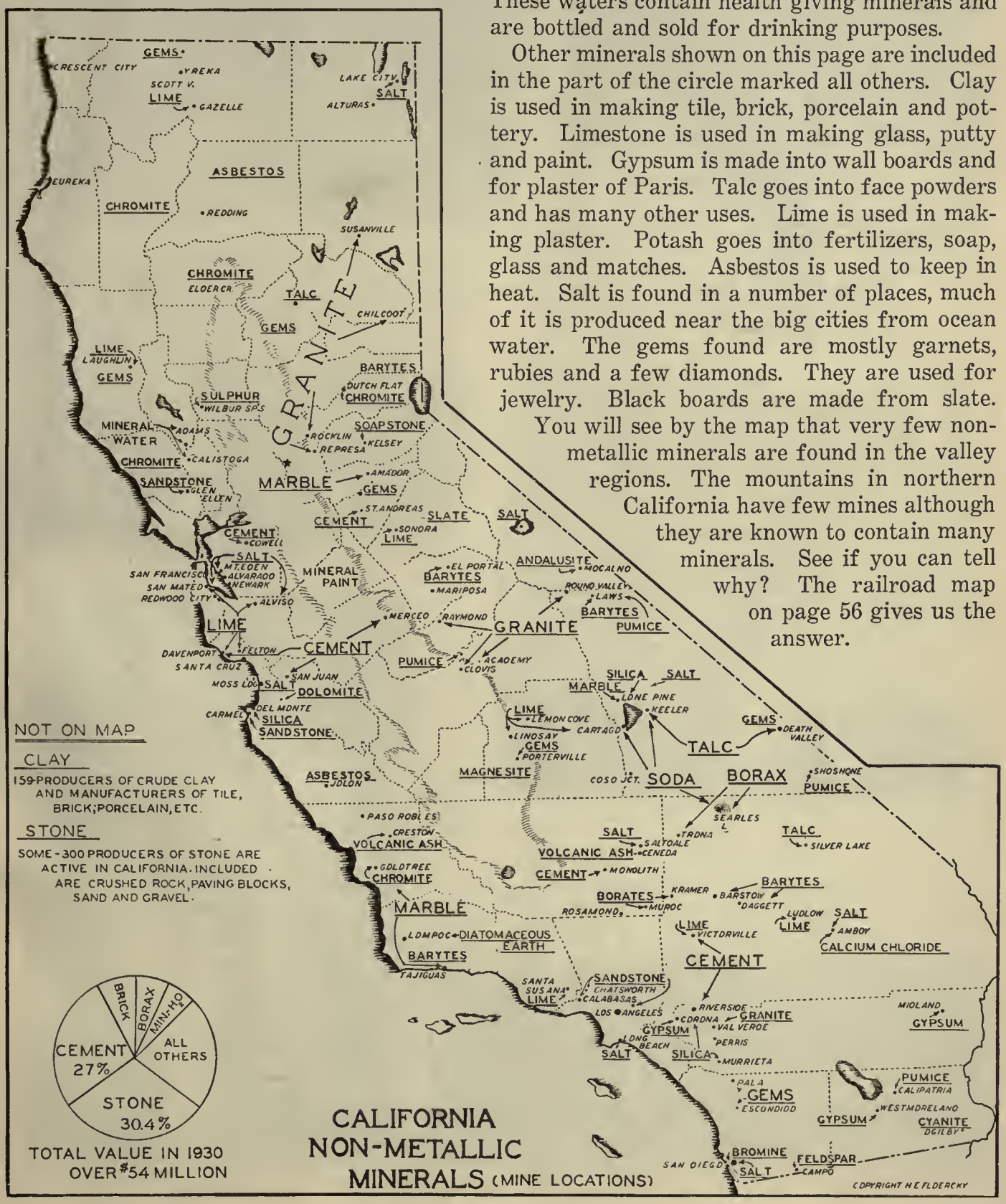


The non-metallic minerals of California are found in many different parts of the state. In value the building materials are the leaders. Stone and cement are used in our buildings, bridges and roads. They have helped California very much in its rapid growth. Our great irrigation dams were made possible by the non-metallic minerals of the state.

Borax is the fourth non-metal in value. It is found in many parts of the desert country north of Los Angeles. Mineral waters are found in many parts of the coastal regions of California (only a few locations are shown in the map). These waters contain health giving minerals and are bottled and sold for drinking purposes.

Other minerals shown on this page are included in the part of the circle marked all others. Clay is used in making tile, brick, porcelain and pottery. Limestone is used in making glass, putty and paint. Gypsum is made into wall boards and for plaster of Paris. Talc goes into face powders and has many other uses. Lime is used in making plaster. Potash goes into fertilizers, soap, glass and matches. Asbestos is used to keep in heat. Salt is found in a number of places, much of it is produced near the big cities from ocean water. The gems found are mostly garnets, rubies and a few diamonds. They are used for jewelry. Black boards are made from slate.

You will see by the map that very few non-metallic minerals are found in the valley regions. The mountains in northern California have few mines although they are known to contain many minerals. See if you can tell why? The railroad map on page 56 gives us the answer.



AN APRICOT TREE

A FIG ORCHARD

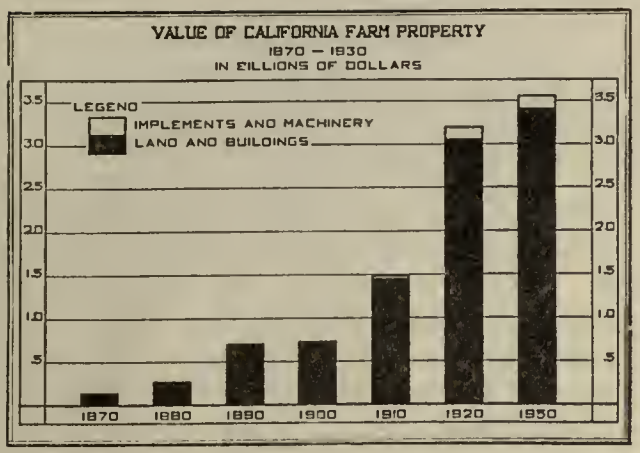
GRAPES GROW ON VINES

INSECT SPRAYING BY AIRPLANE

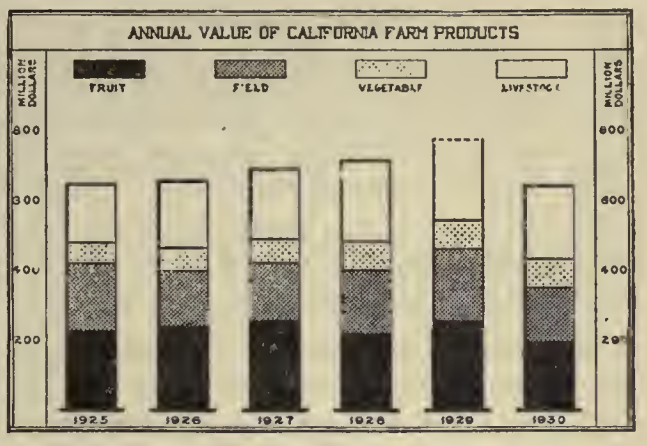
GRAPE CLUSTERS

LETTUCE IS OUR LEADING VEGETABLE

Fruits and Vegetables in California



Courtesy State Chamber of Commerce



Courtesy State Chamber of Commerce

Value of Farm Property

Almost everything in this world of ours has some value. Value means what a thing is worth. Your new shoes or skates cost so much money. As they wear out they lose their value. Now some things that we buy do not lose their value as they get older. Land, for example, usually is worth more the longer it is kept. You may put a house and barn on it, buy some animals and place a fence around it. Then if you live on it and start things growing that can be sold, you have given the land a real gain in value. It will be worth more because of the things that have been added to it. Its value is higher because it will go to work for you.

The tall black bars, at the top of this page, show how the value of all the farms in California have gained in the past 60 years. Most of the big gain between 1910 and 1920 was made during the years of the World War. The prices for growing things were higher all over the country. They brought the farmer more money so his land value gained. Since 1930 the cost of everything has come down. The next bar, which will be added in 1940 is likely to be much lower.

Only two other states in the country showed a higher land value than California in 1930.

We have just learned that our state is one of the leaders in the value of its farm land. What guess would you make as to how we stand in the value of our crops? Did I hear some one say, "First place." Yes, in the last few years California farmers have received more money for the things that they raise than the farmers in any of the other states.

Value of Farm Products

The bars at the top of the page show the different kinds of food grown. Each bar gives the value of everything sold. 1929 was the best year.

Fruit brings in the most money. It is the black part of the bar. There does not seem to be much difference between the livestock and field crop portions. They are the white and the criss-cross lines. The vegetables come last.

The value of our farm products have had a big drop since the 1930 figures shown above. In 1931 they fell off about one-third and since that time have lost almost as much more. The world depression has been responsible for the loss.

Co-operative Marketing

One of the big problems that California farmers faced in the early days was how to get their perishable products to the large eastern and foreign markets without spoiling.

That this problem has been overcome by improved refrigeration and better packing is shown by the fact that more than 15,000 carloads of canteloupes are picked, crated and shipped in a few weeks every summer from the Imperial Valley alone. Eleven thousand carloads of lettuce are similarly handled each spring.

Canning fruit and vegetables has been another great aid in marketing.

In the pages that follow we show how California compares with the rest of the country in farm production. The growing areas of the different crops are shown on separate maps.

Citrus Fruits

Our California fruits are usually of two kinds, citrus or deciduous. The orange, lemon, lime, citron, grapefruit, kumquat and tangarine belong to the citrus family. They are much alike in color. Their skins are tough and the inside soft and full of juice. They seldom drop from the tree when they are ripe.

The next time that you say, "I'll have lemonade, please," just remember that the juice came from California lemons. We raise nearly all the lemons in the United States.

Citrus fruits bring the grower much money. They should make money for the farmer because it costs a great deal to grow them. The land has first to be bought and then planted with young trees. It takes several years for the fruit to appear. In the meantime the land must be cultivated, watered and fertilized. Insect pests have to be sprayed. When the temperature drops below freezing oil must be burned. The grower gets no return from any of this outlay until his first crop is picked.

There are two kinds of oranges grown in quantity. They are called Valencia and Navel. The land planted to each is about equal. Valencias were brought from Spain. We get them from May to December. Navels are from South America. They come to us during the other half of the year.

Deciduous Fruits

Deciduous fruit trees are those that lose their leaves in the winter. They do not have tough skins like citrus fruits. The principal ones are peaches, pears, plums and apricots.

The development of the canning industry has been a wonderful help to the deciduous fruit growers. Fruit that would soon perish if left in the air can be kept in cans for many years.

Another way to keep fruit for a long time is by drying it in the sun. We have all eaten sun-dried raisins, or apricots. Drying in the sun seems to improve the flavor of the fruit.

In late, good years more than 30 million cases of fruits and vegetables have been canned. Peaches are the leading canning fruit.

The Grape Industry

More land is planted to grapes and a greater tonnage is produced than any other fruit grown in the state.

Over 300 million dollars have been spent on the vineyards and packing plants of California. Grapes are grown for table use, for wines and other juices, and for raisins. The state raises nearly all the grapes in the United States. The San Joaquin Valley is the big growing area.

Years ago California was a great grain country. Today fruit and vegetables have taken the lead. The warm winter climate makes it possible to get these products to the eastern markets when prices are high. Thousands of carloads of early vegetables are shipped each spring. People in large cities, like New York, will pay high prices for out of season food. Winter strawberries, early lettuce, citrus fruits, avocados and cantaloupes are being raised in ever increasing numbers to supply this demand.

California produces nearly ¼ of the vegetables of the United States. You will see that the state leads in almost every kind that is grown. The increasing sale of canned vegetables has been a great help in moving the perishable kinds.

In field crops the state stands fourth nationally in production of hay, rice and beans.

In livestock and its products the state ranks tenth in cash income.

A Date Palm in Fruit

The map on this page shows the chief growing areas in California. The principal valleys are marked with shading (small lines). We must keep in mind the thought, when we look at this map and those that follow, that they were only drawn to give us an idea of what our farms usually produce. The names and figures give the number of acres planted in a late year. The same field and vegetable crops are not always repeated each year. We find less change in the fruit and nut orchards because they grow on vines or trees.

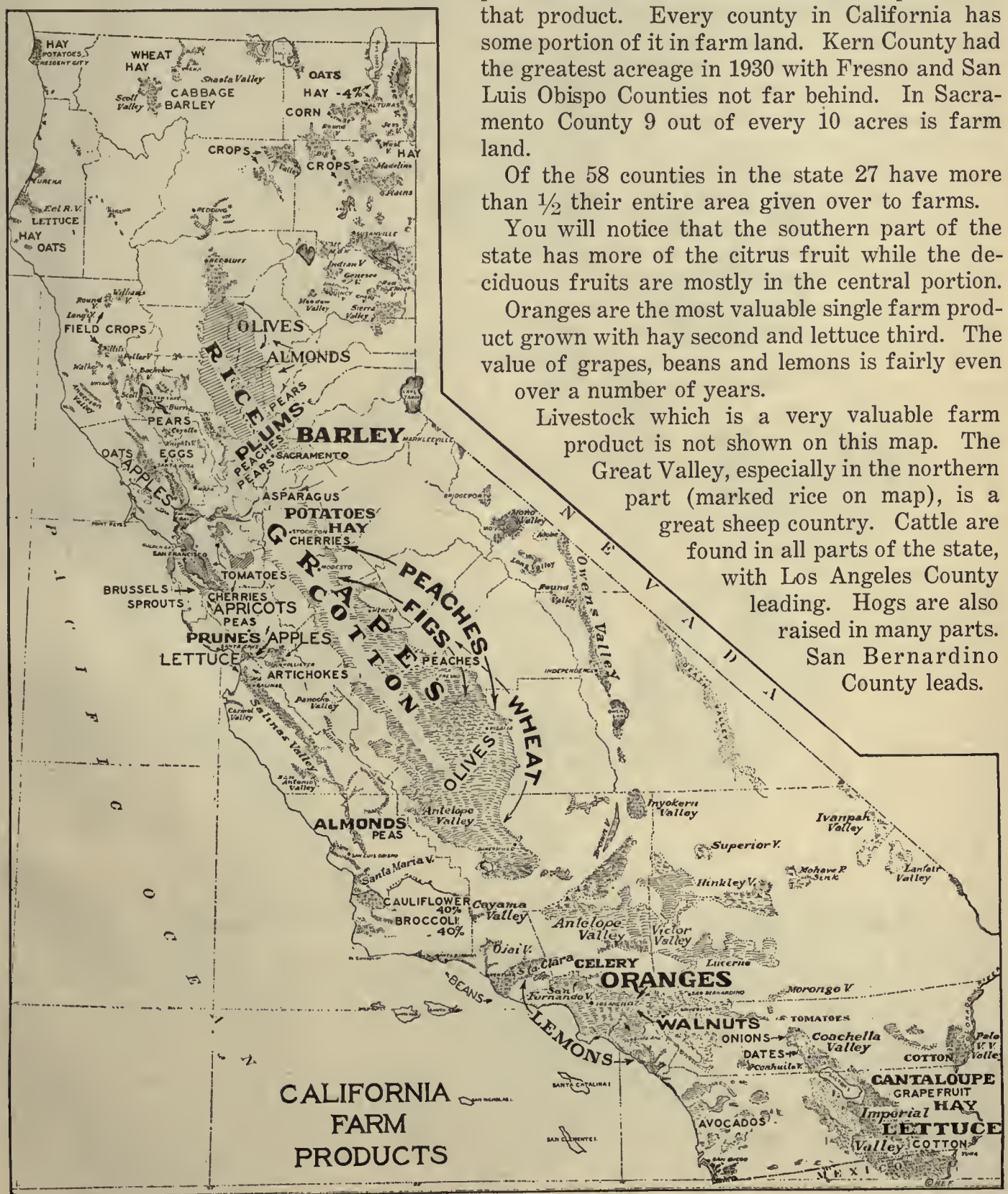
The map gives only the leading products and the part of the state that has the most land planted to that product. Every county in California has some portion of it in farm land. Kern County had the greatest acreage in 1930 with Fresno and San Luis Obispo Counties not far behind. In Sacramento County 9 out of every 10 acres is farm land.

Of the 58 counties in the state 27 have more than ½ their entire area given over to farms.

You will notice that the southern part of the state has more of the citrus fruit while the deciduous fruits are mostly in the central portion.

Oranges are the most valuable single farm product grown with hay second and lettuce third. The value of grapes, beans and lemons is fairly even over a number of years.

Livestock which is a very valuable farm product is not shown on this map. The Great Valley, especially in the northern part (marked rice on map), is a great sheep country. Cattle are found in all parts of the state, with Los Angeles County leading. Hogs are also raised in many parts. San Bernardino County leads.



Apples are the leading fruit in the United States amounting to over one-third of the total production—California ranks 4th.

Grapes average nearly 2½ million tons a year, California producing about 90%.

Oranges average nearly 1½ million tons a year, California producing nearly 70%.

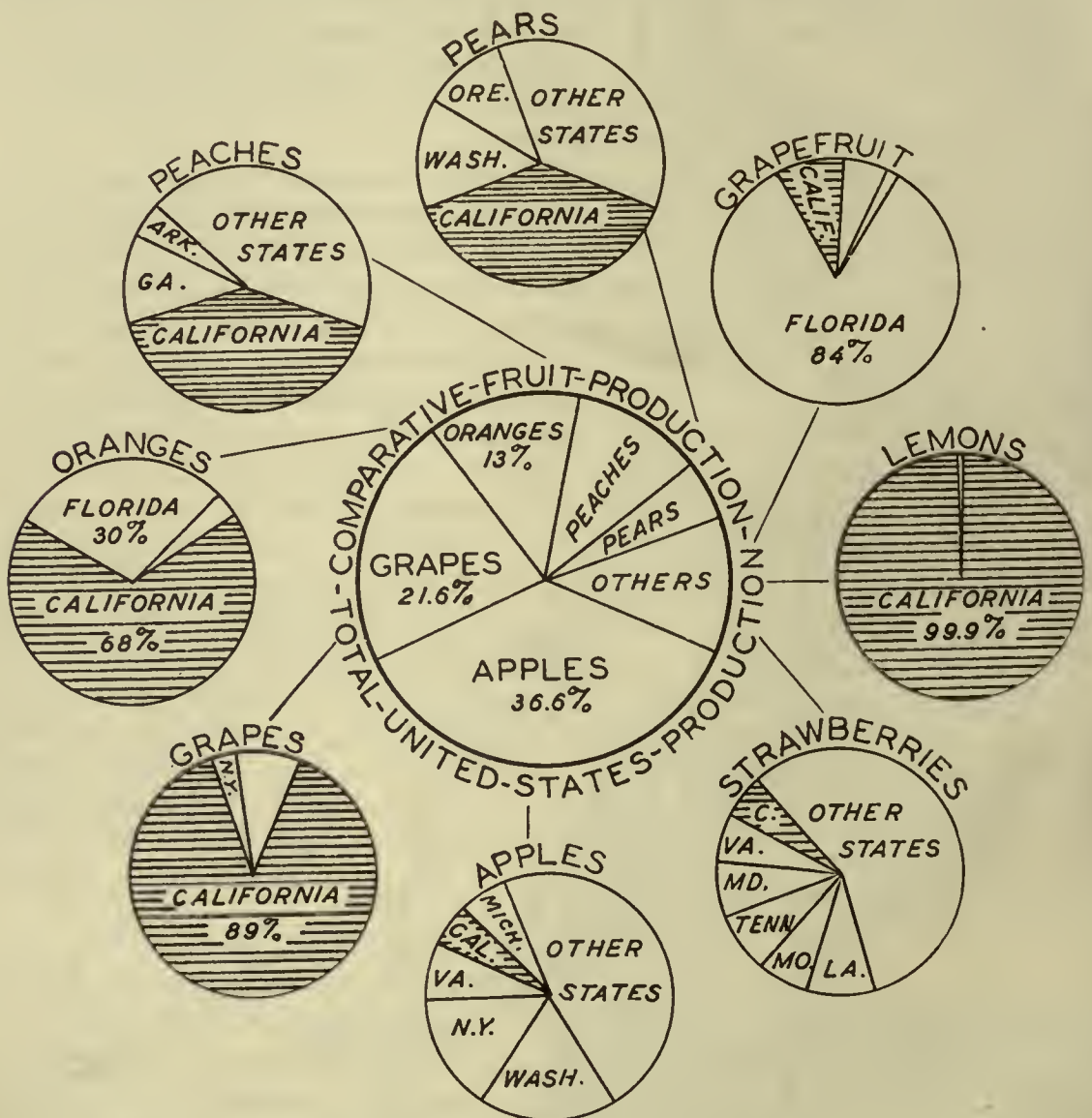
Peaches average about more than a million tons a year, California producing 40%.

Pears average ½ million tons, California producing 38% of the total.

Grapefruit average about one-third million tons, Florida leads with California second.

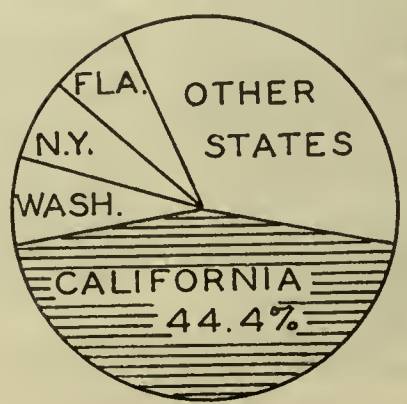
Lemons average over ¼ million tons, chiefly produced in California.

Strawberries average over ¼ million tons—California stands sixth. **Prunes** are next with 236 thousand tons.



Comparative Fruit Values in the U. S.

The above comparisons are based on tonnage. If values were used apples would only amount to 30% with oranges second at 20%; peaches third with 9%, grapes next with 8.8%, followed by strawberries, grapefruit, pears, prunes, lemons and cherries.



State Position in Products

California produces about 80% of the remaining fruits. California grows practically all of the apricots, avocados, plums, pomegranates, dates, olives, persimmons, and 88% of the figs. Washington comes next to California because of its large apple and pear production.

The map on this page shows us where most of our fruit is raised. All of the valley lands grow fruit. The circle charts, in the corner, show that the largest growing areas are planted to grapes. Oranges have the greatest value. The lemon acreage is very small but the values are high. We can judge from this that lemon orchards are very valuable.

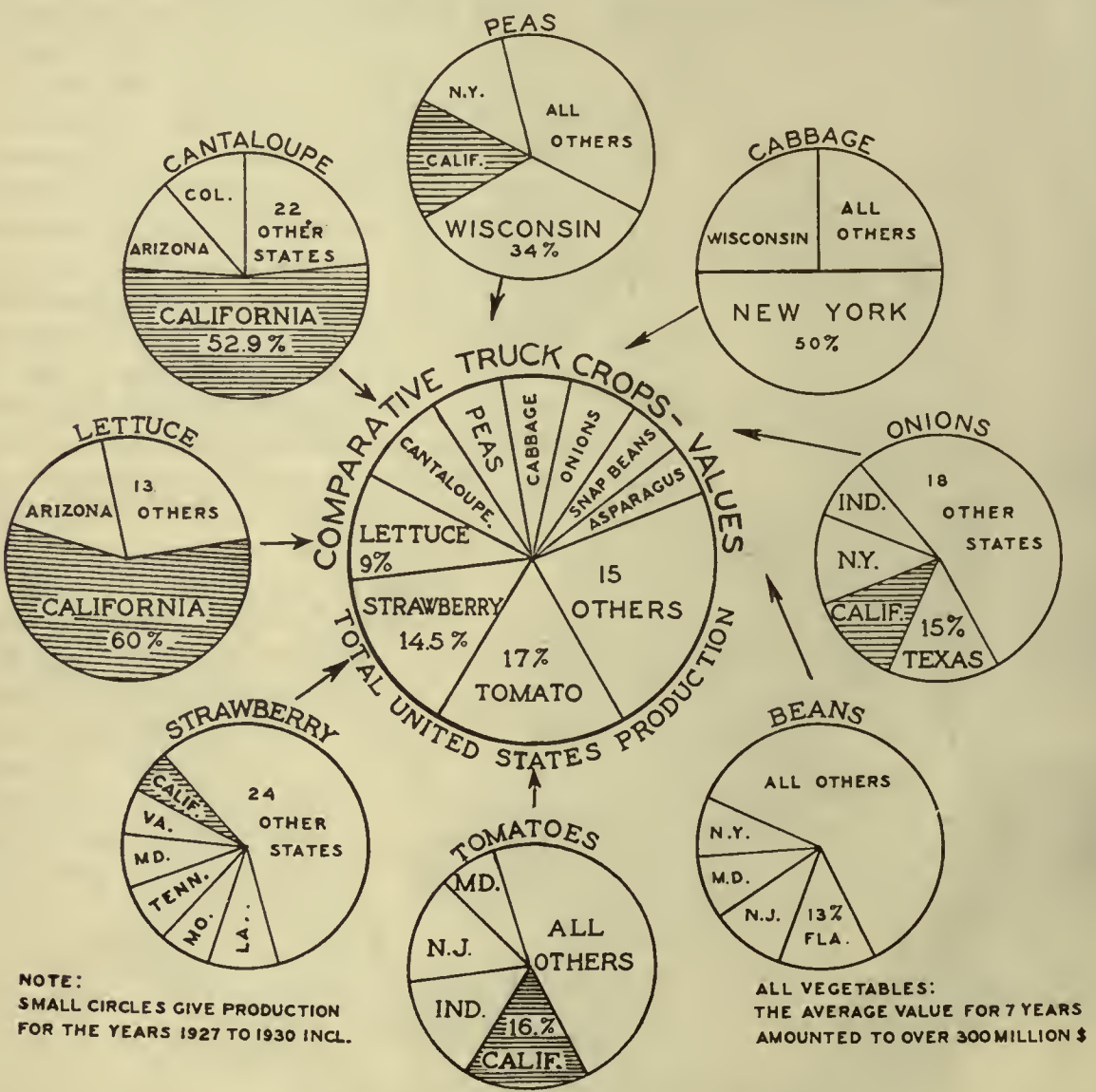
Most of the oranges, lemons and walnuts are grown in Southern California. However, they may also be found in other parts of the state. There is a good planting of oranges in the upper San Joaquin Valley and new groves are going in at the upper end of the Sacramento Valley.

Only the leading fruit areas are shown on the map. Prunes, for example, are found in many parts of California but the largest production area is in the Santa Clara Valley. Peaches are found in the greatest number above Sacramento, and olives near Visalia. Apricots lead in Santa Clara Valley with the country around Ventura and Los Angeles not far behind. Almonds, plums and pears have their heaviest plantings in the Sacramento Valley. San Luis Obispo County shows the greatest single almond acreage of late. Cherries are grown in most of the valley land around San Jose, San Leandro and Stockton. Santa Rosa and Santa Cruz are the centers of the apple country. Grapefruit, dates and avocados come from the south.

The fruit values shown on the map were taken from one of our best years. Since that time they have been greatly reduced. They show us what can be done when times are good. What part of the state produces most of our citrus fruits? Where are apples raised?

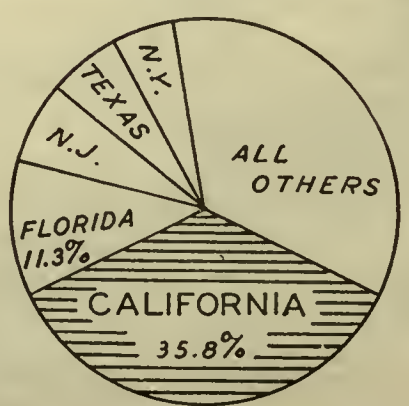
Truck crops are mostly vegetables. They are farm products that are usually grown near the larger cities and can be carried to the market by means of automobiles. We raise and ship, in cooled railroad cars, many truck crops, such as melons and lettuce. The ice keeps them from spoiling.

The chart below shows the leading truck crops of the United States. The large circle gives the yearly average money return to the farmer for a 7-year period. The smaller circles show how much is grown in the different states. (California also leads in the production of asparagus, carrots and cauliflower.)



Comparative value of 24 truck crops in the United States.

The value of canned vegetables in the United States is about equal to the total value of the truck crops. Canned soup leads with beans, peas, tomatoes and corn next in value.



State position in truck crops.

California stands first in the production of the 24 leading truck crops. It also leads in the canning of vegetables. Over 1/3 of all vegetables raised in the country are grown in California.

BAY VIEW SCHOOL LIBRARY
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No.

Many California farmers have gone into the raising of vegetables in a large way. The valley lands of the coast have just the right soil and climate to produce good results.

The map shows 6 growing areas or districts. The Imperial Valley is the leader because of the value of its melon and lettuce crops. Many a home in the eastern part of the country enjoys cantaloupe for breakfast and salad at dinner, grown for them in Imperial County.

The large cities are of course the best market for vegetables. You will see that the two largest growing districts after Imperial, are near Los Angeles and San Francisco. The fine roads into these cities allow the farmer to truck his crops directly to the buyers.

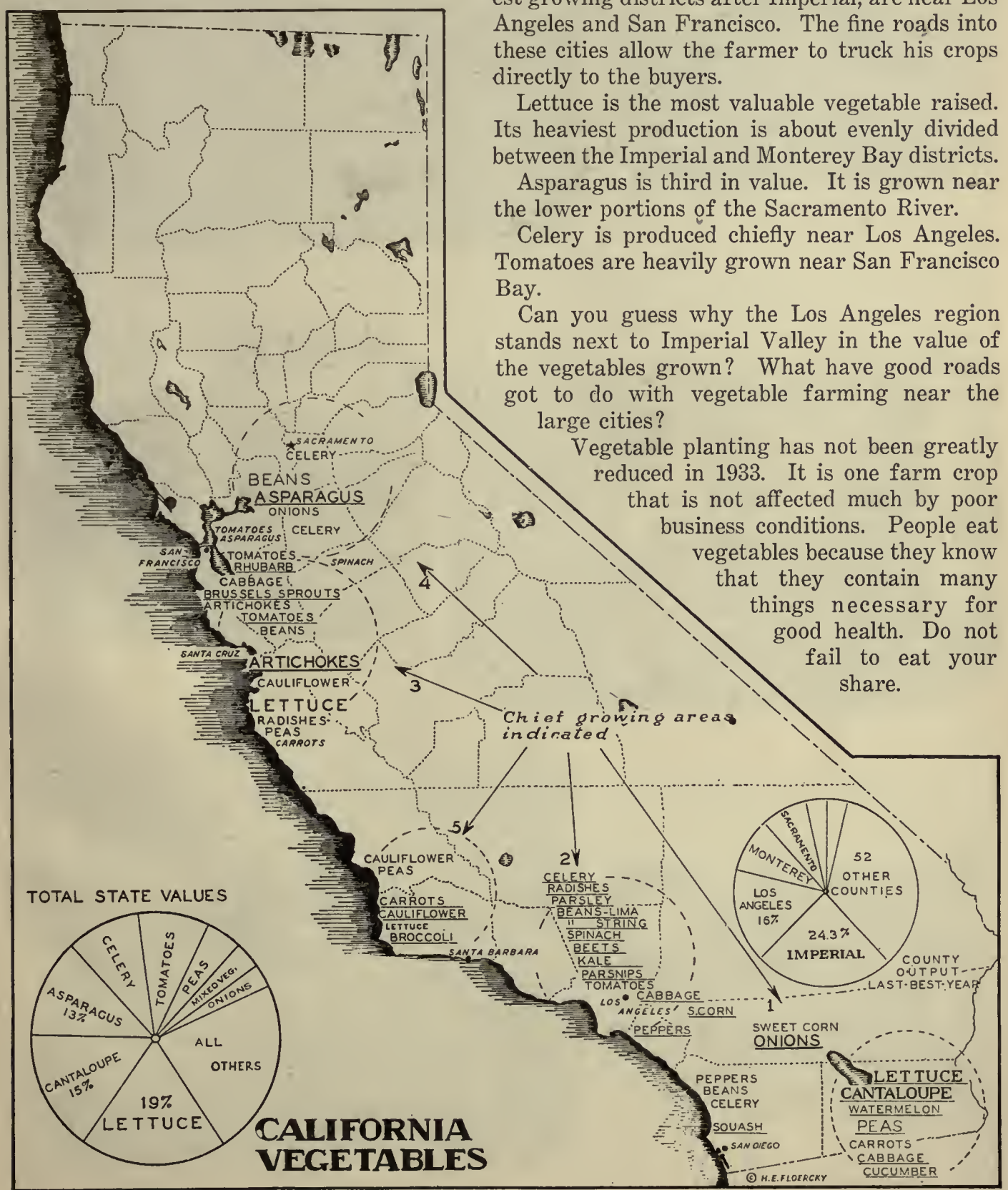
Lettuce is the most valuable vegetable raised. Its heaviest production is about evenly divided between the Imperial and Monterey Bay districts.

Asparagus is third in value. It is grown near the lower portions of the Sacramento River.

Celery is produced chiefly near Los Angeles. Tomatoes are heavily grown near San Francisco Bay.

Can you guess why the Los Angeles region stands next to Imperial Valley in the value of the vegetables grown? What have good roads got to do with vegetable farming near the large cities?

Vegetable planting has not been greatly reduced in 1933. It is one farm crop that is not affected much by poor business conditions. People eat vegetables because they know that they contain many things necessary for good health. Do not fail to eat your share.



HAY IS OUR LEADING FIELD CROP

A FIELD OF OATS

COTTON PICKERS AT WORK

CUTTING ALFALFA

GATHERING POTATOES

HARVESTING BARLEY

Field Crops in California

California raises so much fruit and vegetables that we are likely to forget that her field crops are also of great value.

In good years the hay crop alone has brought the farmer more than 50 million dollars.

Alfalfa, the principal kind of hay grown will be found in nearly every county in the state.

The map on this page tells us where we may expect to find the different kinds of field crops growing.

Beans are the second most valuable field crop grown. Ventura County raises just twice as much as Santa Barbara County which stands second. Orange County also produces a large bean crop. There are nearly a dozen kinds of beans. The standard limas make up about a third of the total.

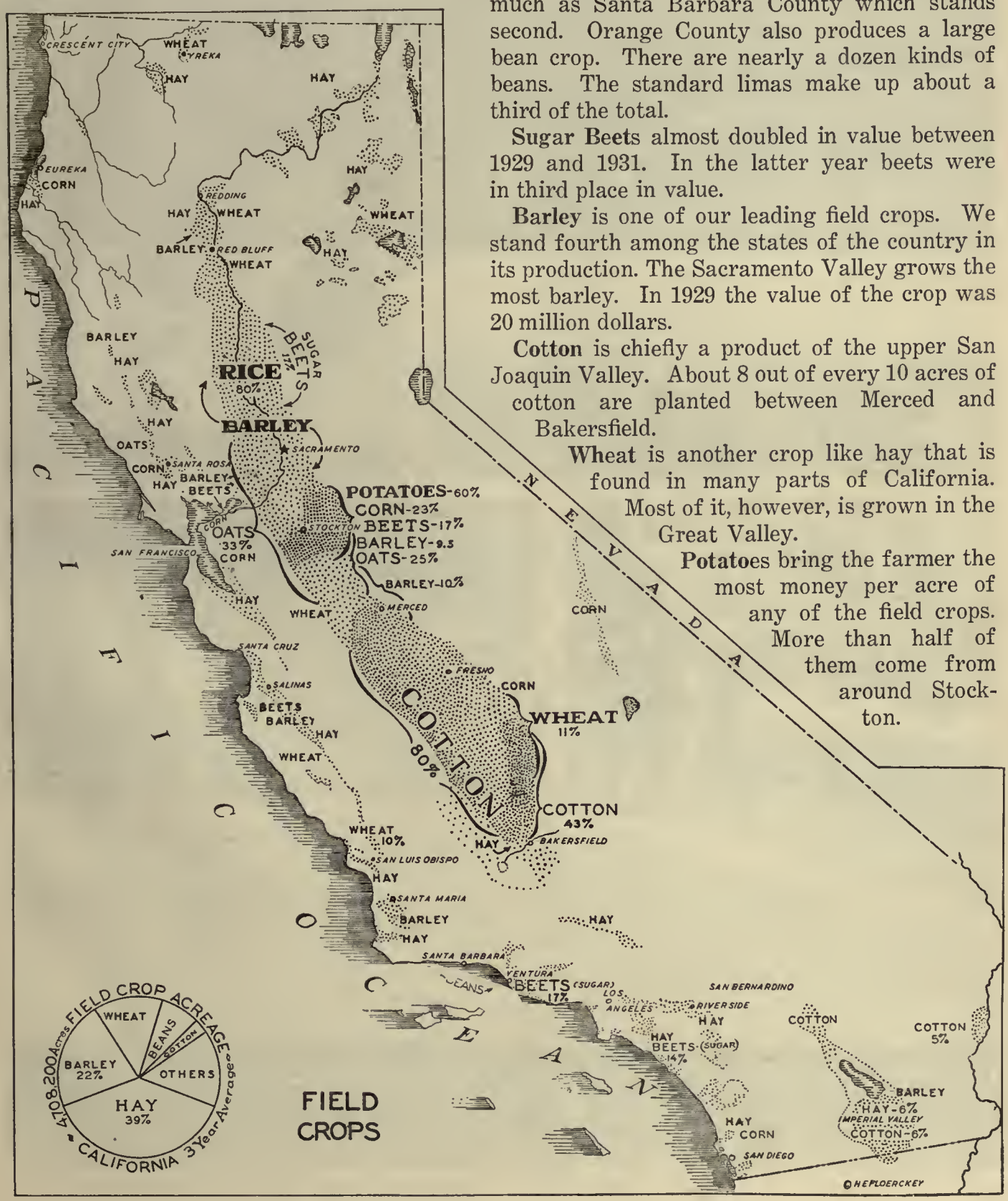
Sugar Beets almost doubled in value between 1929 and 1931. In the latter year beets were in third place in value.

Barley is one of our leading field crops. We stand fourth among the states of the country in its production. The Sacramento Valley grows the most barley. In 1929 the value of the crop was 20 million dollars.

Cotton is chiefly a product of the upper San Joaquin Valley. About 8 out of every 10 acres of cotton are planted between Merced and Bakersfield.

Wheat is another crop like hay that is found in many parts of California. Most of it, however, is grown in the Great Valley.

Potatoes bring the farmer the most money per acre of any of the field crops. More than half of them come from around Stockton.



California Livestock Pictured in Different Parts of the State

The raising of cattle, hogs, sheep, horses and chickens is about the oldest business in California. Cattle were the first domestic animals to come into the state. They were brought into Mexico by Cortez more than 300 years ago. It is supposed that they crossed the border into California about the time that Portola arrived. Today there are about 2 million in the state. Every county has some production. Tulare lead in a recent year.

Cattle are raised to be sold for food and to produce milk. The farmer gets more money for milk than for anything else that he raises. Milk is also used to make butter, cheese, ice-cream and condensed, dried, powdered, evaporated and malted milk. California stands sixth amongst the states in the production of butter and fourteenth in cattle.

Horses and colts in California in 1931 numbered about 226 thousand. They were valued at $69 per head. All parts of the state raised horses. Fresno County led recently with about 6%. Most farmers now depend on tractors to do their field work. The day of the horse is rapidly passing.

Hogs—Nineteen states had more hogs than California. The state showed a total of 542 thousand (Iowa had 20 times that many). San Bernardino County led recently with 13%. The value of hogs sold for food was nearly 15 million dollars in 1929, a very good year.

Sheep—California stands second nationally, in the number of sheep on farms with 4 million. They were valued at $11.40 each in 1928 but had fallen to $6.20 each in 1931.

The production of sheep and lambs in a recent good year, was valued at more than 17 million dollars. California led the country in this respect. Each spring hundreds of thousands of baby lambs are sent to the eastern markets. Sheep graze in many parts of the state. Imperial, San Joaquin and Palos Verde Valleys are large producing areas.

California stands fourth in the production of wool. Texas, Montana and Wyoming are the leaders.

Milk, Cows and Dairy Cattle

It is estimated that there are 600 thousand cows and heifers, 2 years old and over, in the state. Thirteen other states have more. California is sixth nationally in the production of butter. The yearly average is about 36 thousand tons.

The farm value of milk, sold by farmers, was over 90 million dollars in 1929, one of the best years.

Chickens

The poultry industry of California has had rapid growth. The even temperatures of the coast regions gives an uninterrupted laying season.

The estimated number of chickens in the state was more than 15 million in a recent year. This placed the state in tenth place nationally.

In good years more than 160 million dozen eggs were obtained. This means about 1 egg a day for each person in the state. They were valued at nearly 20 million dollars.

More than a third of the eggs laid are shipped to eastern markets. Two thousand carloads were moved in 1929. New York is the largest market receiving about 2/3 of the total.

The largest producing regions in the state are in Sonoma, Los Angeles and San Diego Counties.

Petaluma in Sonoma County is called the world's "egg basket."

Birds

The most important game birds in California are mountain and valley quail, grouse and sage hen.

Doves are plentiful and in season are hunted over a great portion of the state.

Ducks and geese are found in great flights over the rice fields of the Sacramento and San Joaquin Valley. They are also plentiful around the lowlands adjoining the Salton Sea. Most of the smaller bodies of water of the state provide some duck hunting.

Due to the warm climate of California many birds are native to the state. There are of course hundreds of different kinds but those commonly noticed by visitors are meadowlarks, nightingales, linnets, orioles, robins, jays, flickers, warblers, sparrows, finches, woodpeckers and road-runners. The golden eagle may often be seen in the higher mountains.

To transport is to move, and the name transportation is used to tell us the manner of moving. This map shows us the railroad and ocean transportation lines. Nearly all of our farming, manufacturing and mining products are shipped by boat, train, truck (see next page) and airplane (page 58).

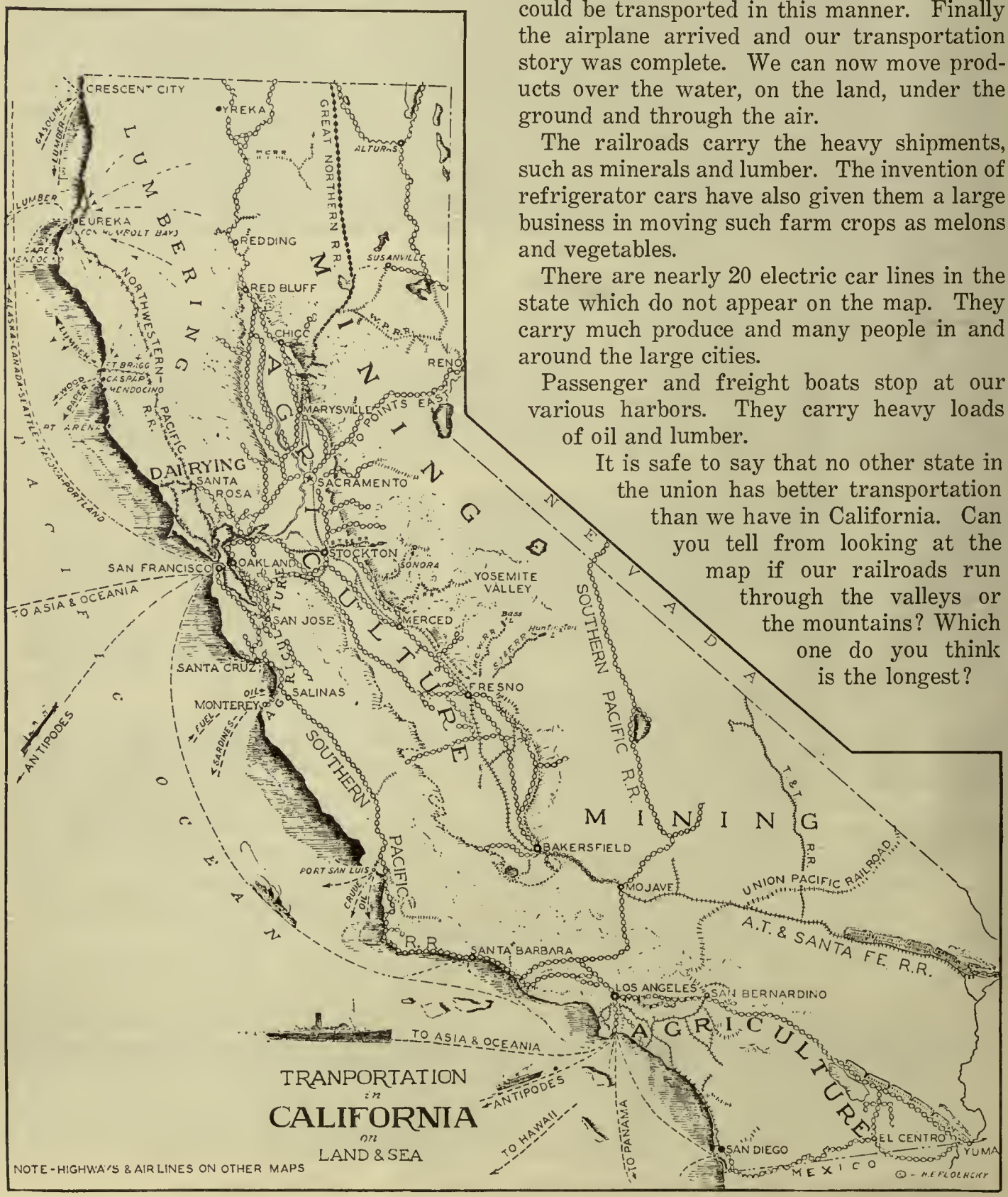
When California was young it had only boats and horses to move its goods. Then railroads came into the state from the east and branch lines were added as business increased. After the automobile was invented good roads were built and goods could be loaded in a truck and delivered in a very short time. Pipes were also run through the ground and water, oil and gas could be transported in this manner. Finally the airplane arrived and our transportation story was complete. We can now move products over the water, on the land, under the ground and through the air.

The railroads carry the heavy shipments, such as minerals and lumber. The invention of refrigerator cars have also given them a large business in moving such farm crops as melons and vegetables.

There are nearly 20 electric car lines in the state which do not appear on the map. They carry much produce and many people in and around the large cities.

Passenger and freight boats stop at our various harbors. They carry heavy loads of oil and lumber.

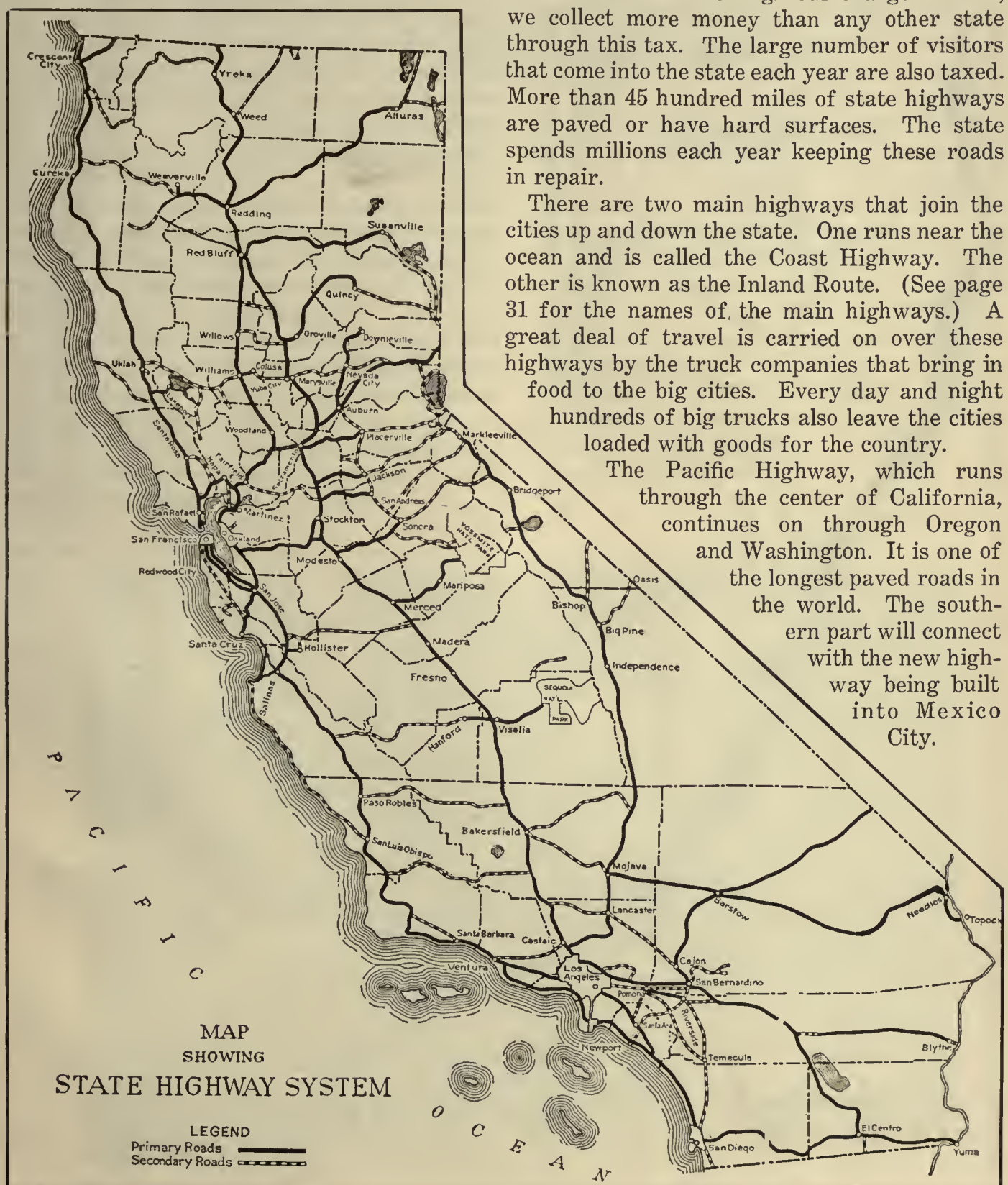
It is safe to say that no other state in the union has better transportation than we have in California. Can you tell from looking at the map if our railroads run through the valleys or the mountains? Which one do you think is the longest?



Have you ever wondered how we get so many fine paved roads? Where does the money come from that pays for all the cement and sand and stone that goes into them? In the towns and cities the streets are paid for by the people who live on them. Outside of the cities, the highways, as they are called are paid for by the state. There are also county roads that are paid for by the different counties. The map shows our state highways. The money for building them comes from the sale of new number plates each year, from fines and from a gasoline tax. The gas tax in California is 3 cents a gallon. In some states it is 7 cents. Even though our charge is small, we collect more money than any other state through this tax. The large number of visitors that come into the state each year are also taxed. More than 45 hundred miles of state highways are paved or have hard surfaces. The state spends millions each year keeping these roads in repair.

There are two main highways that join the cities up and down the state. One runs near the ocean and is called the Coast Highway. The other is known as the Inland Route. (See page 31 for the names of the main highways.) A great deal of travel is carried on over these highways by the truck companies that bring in food to the big cities. Every day and night hundreds of big trucks also leave the cities loaded with goods for the country.

The Pacific Highway, which runs through the center of California, continues on through Oregon and Washington. It is one of the longest paved roads in the world. The southern part will connect with the new highway being built into Mexico City.

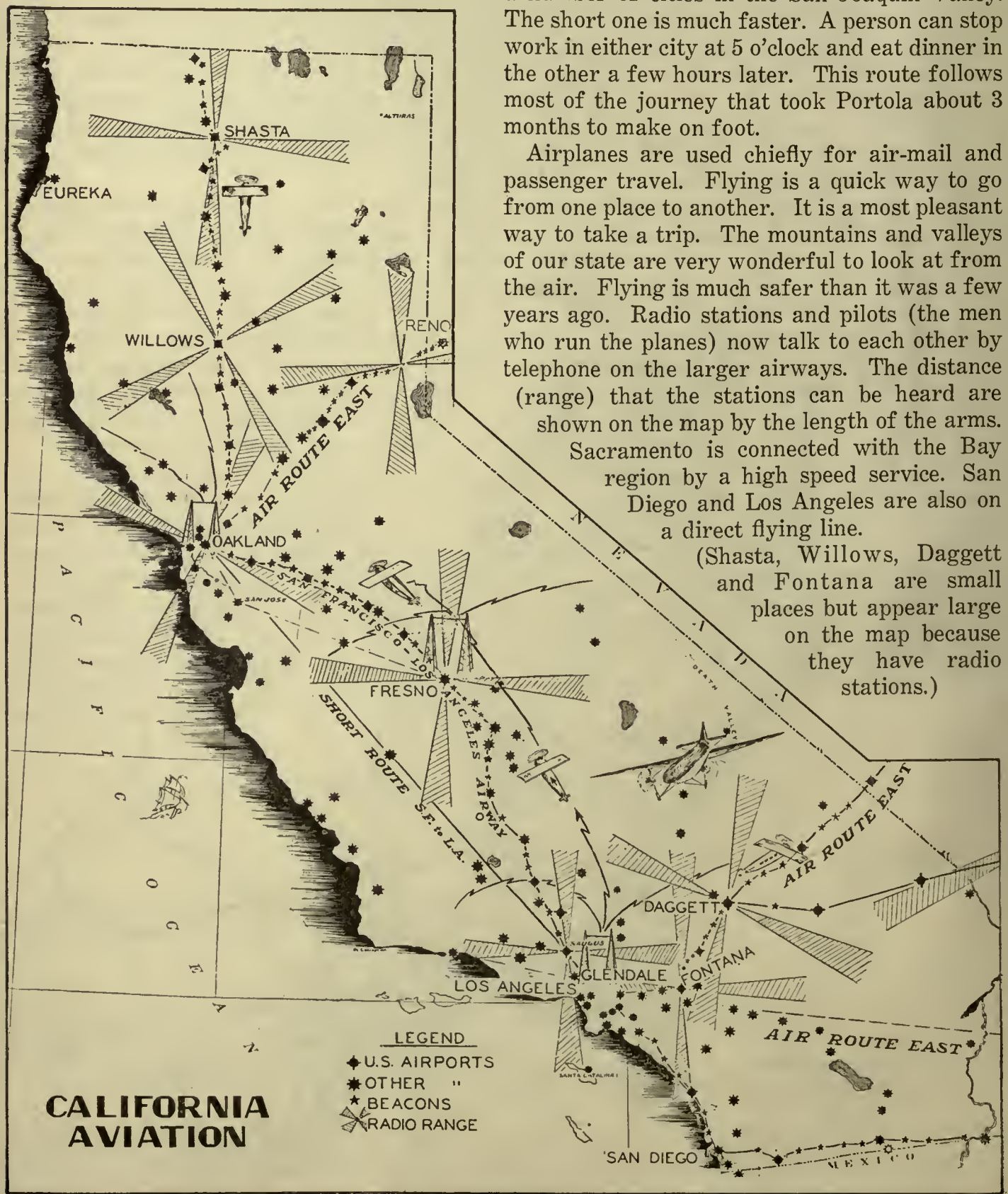


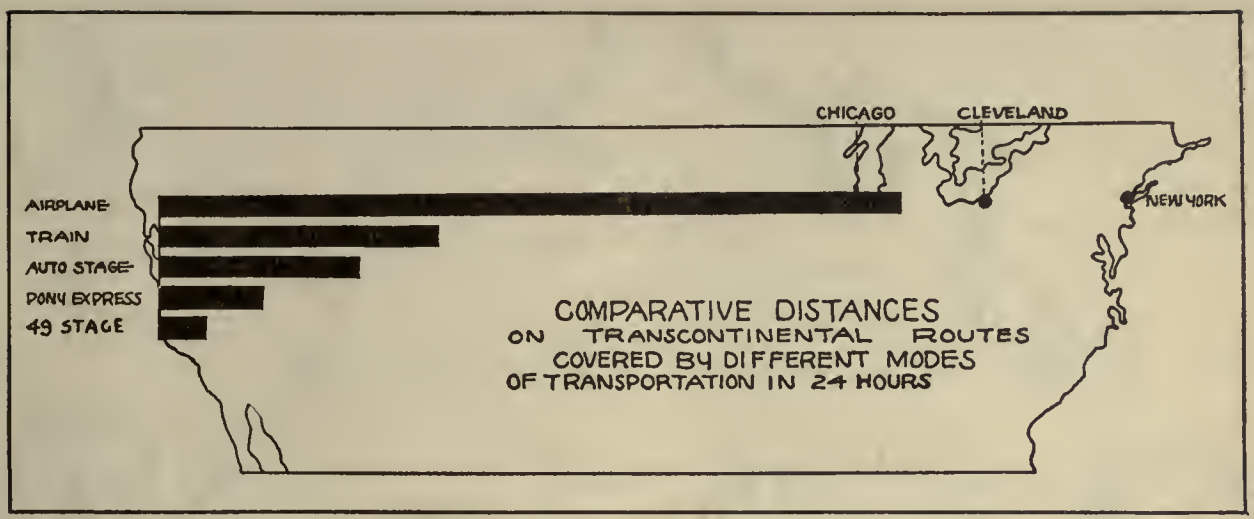
This map tells the story of the airplane in California. It has become a regular means of transportation. The large number of landing fields are shown by the big black stars. They are flat, level pieces of ground that will give the flyer a safe place to land. The smaller stars, between the landing fields, mark the spots where large lights or beacons have been built. They may be seen by the flyer for many miles.

You will notice two airways, or routes as they are often called, between San Francisco and Los Angeles. The longer one has stopping points at a number of cities in the San Joaquin Valley. The short one is much faster. A person can stop work in either city at 5 o'clock and eat dinner in the other a few hours later. This route follows most of the journey that took Portola about 3 months to make on foot.

Airplanes are used chiefly for air-mail and passenger travel. Flying is a quick way to go from one place to another. It is a most pleasant way to take a trip. The mountains and valleys of our state are very wonderful to look at from the air. Flying is much safer than it was a few years ago. Radio stations and pilots (the men who run the planes) now talk to each other by telephone on the larger airways. The distance (range) that the stations can be heard are shown on the map by the length of the arms. Sacramento is connected with the Bay region by a high speed service. San Diego and Los Angeles are also on a direct flying line.

(Shasta, Willows, Daggett and Fontana are small places but appear large on the map because they have radio stations.)



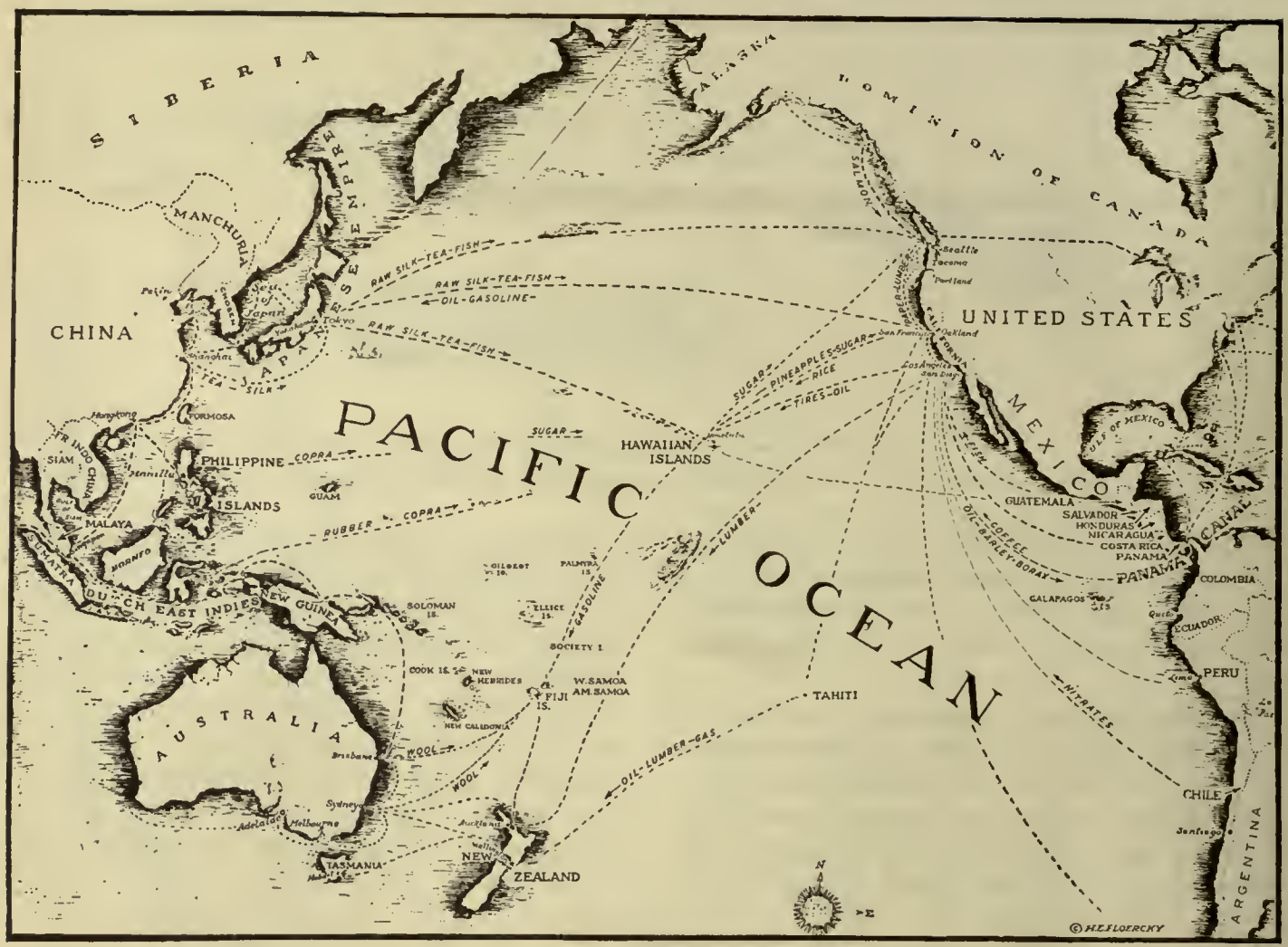


Before the stage coach days the only kind of overland transportation was by horse or on foot. The early travelers were fortunate if they could make more than 10 to 20 miles a day.

It is interesting to note the progress that has been made in the speed of different kinds of transportation in the past 85 years. You will see from the map that airplanes on regular runs now take passengers more than 16 times as far in 24 hours as they did in the days of the overland stage.

Times are changing very rapidly and airplane speeds are increasing at a very fast rate. It is thought that soon large planes carrying freight and passengers will cross the United States in from 7 to 10 hours. Already speeds of from 300 to 400 miles an hour have been made in air races. When planes on regular schedules travel at this rate people will breakfast in New York and have dinner in California. This improvement in transportation is continually bringing more people into the state.

A Modern Speed Plane



California Trades With the World

We have by now a pretty good picture in our minds of the business of California. We know what the people do to earn their living. We know what they produce. We do not, as yet, know where all these products are sold.

The map above shows the countries whose shores are washed by the mighty Pacific. Half the people of the entire world live within the area of this drawing. The dotted lines show the ship lanes—the paths followed by the freight and passenger boats that cross the ocean.

You will see at once why California would get the biggest part of the trade carried on between the United States and the countries on the map.

Here then is one very large market for our goods. We call it our foreign commerce. Most of the things that we sell outside of our own country go across the Pacific.

Now this trade, or commerce operates both ways. We buy from them and they buy from us. It is fortunate that each country needs what the other country produces.

Rubber is produced in the Dutch East Indies and the Islands of Malaya. It is not raised in any great amount in the United States. We buy this rubber and make it into automobile tires in California. A number of these are then sold back to the people that use cars in the rubber country.

In the same way we buy raw silk from Japan and China and raw sugar from the Hawaiian Islands. Our machinery turns these raw materials into finished materials. The silk and sugar are not of much use unless this work is done upon them. Our manufacturers turn the silk into dresses and stockings. We take the raw sugar and turn it into the lump and granulated sugar which we use on our tables.

We have many farm products, mineral and manufactured goods that are wanted by the people of the Pacific. It would be a good guess to say that our business with them will show a big increase in the years to come.

Things that come into our land from outside or foreign countries are spoken of as imports. It will be easy to remember the word, if we say to ourselves, 'Import—Into the port.' The things that are shipped out are called exports.

Many of the imports into California are raw materials. The principal imports are:

From Japan—silk, frozen and preserved fish, china and earthenware, and feed (oil cake, etc.), fertilizer and rags.

From China—preserved eggs, sesame seed, vegetable oils, nuts and silk.

From Dutch East Indies—crude rubber, copra, kapoc, spices and tin.

From Philippine Islands—copra (for soap making), hardwood lumber, sugar, vegetable oils, hemp and tobacco.

From Central America—sugar and bananas.

From Mexico—fresh fish and copper.

From Chile—nitrate of soda.

From Hawaiian Islands—sugar, pineapple and molasses.

From Straits Settlements—rubber.

From South America—coffee.

Silk is the leading import of the United States in value. Rubber is also very important. They are both produced across the Pacific and shipped in quantity to the Pacific Coast.

The shipments out of California, the exports, are great in number. Some 600 different kinds of things go out from our harbors each month. Ice-making machines (refrigerators) for the cities near the Equator; moving pictures for the mining towns of Peru or the crowded cities of China; oil; gas; everything from a needle to an airplane.

Our chief exports are:

To Great Britain—oil and fruit.

To Japan—raw cotton, bulk oil, tires and tubes, rice, chemicals, gasoline, asphalt, metals and manufactures.

To China—kerosene, gasoline, bulk oil, raw cotton, and some 50 others.

To Dutch East Indies—tires, oil well machinery, kerosene, canned sardines and automobiles.

To Philippine Islands—gasoline, asphalt, canned fish, fuel oil, tires and tubes.

To Central America—gas and fuel, oil, foodstuffs, lumber.

To Hawaiian Islands—rice, hay, bulk oil, cement, iron and steel.

Canned fruit and canned fish are shipped to all parts of the world from California.

Petroleum is one of the principal exports of the country and you will note that it appears above as the leading export of California.

Ships of Many Nations Come to Los Angeles Harbor Courtesy Los Angeles Chamber of Commerce

Imports

On the last page we talked about the countries that buy our goods and sell us materials in return. Let us now speak of the different kinds of imports, the chief things that we buy.

If we are thinking in terms of money RAW SILK will head the list. Coffee is second with copra third. The silk comes from Japan and China, the coffee chiefly from South America and the copra from the Philippines.

Here are the main Imports into San Francisco in a late year (By weight.)

1. Sugar—9 out of 10 lbs. from Hawaii.
2. Paper—7 out of 10 lbs. from Canada.
3. Pineapples—from Hawaii only.
4. Copra—5 out of 10 lbs. from Philippines, 2 out of 10 from the East Indies.
5. Molasses—from Hawaii.
6. Coffee—7 out of 10 lbs. from South America.
7. Silk—8 out of 10 lbs. from Japan.

The chief Imports into Los Angeles in 1931 were as follows: (By weight.)

1. Copra—9 out of every 10 lbs. comes from the Philippines.
2. Fertilizers—Mostly nitrates from Chile.
3. Crude Rubber—8 out of every 10 lbs. comes from the Straits Settlements.
4. Bananas—Mostly from Central America and Mexico.
5. Lumber—From Canada, Washington and Oregon.
6. Paper, Newsprint—Half from Canada and half from Norway and Sweden.

The Imports listed above cover but one year. We must not forget that they change from time to time. For example in 1929 at Los Angeles Harbor rubber headed the list with coffee second and paper third. As you see from the above, rubber dropped to third place with coffee showing an even greater decline in 1931. By 1933 another equally great change may take place.

Our imports and exports as well, depend on the demand for the things that we manufacture. Changing conditions in the world market affects our ocean commerce.

Exports

Many different things are shipped out of California, but oil is by far the leader. Both the San Francisco Bay Region and Los Angeles refine oil and ship a very large tonnage of crude oil, fuel oil, gasoline and kerosene. England has usually been the largest buyer.

1. Oil Products—to
   England— 16 out of every 100 gals.
   Japan— 12 out of every 100 gals.
   Chile— 11.8 out of every 100 gals.
   Canada— 11.4 out of every 100 gals.
2. Raw Cotton—54 out of every 100 bales went to Japan and 10 to England.

The chief Exports from Los Angeles in a recent year was as follows: (By weight.)

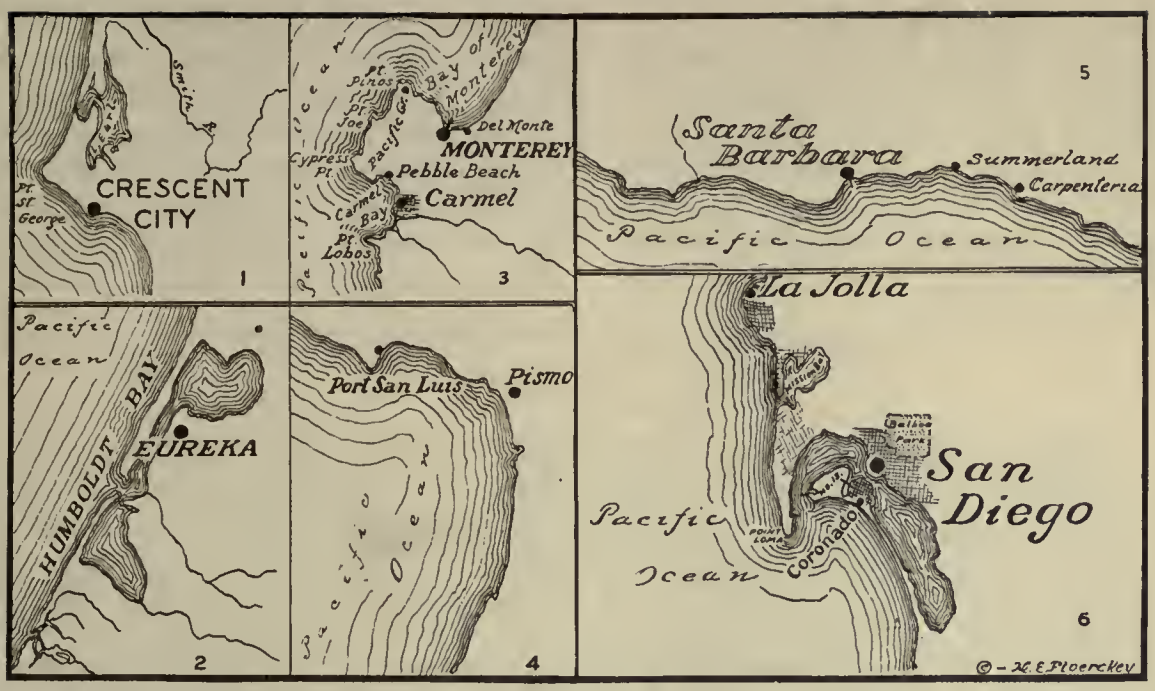
3. Gasoline—36 cases out of 100 to England.
4. Kerosene—52 out of 100 cases to China.
   13.7 out of 100 cases to Br. India.
5. Sardines—to 53 foreign countries.
6. Borax—42 out of 100 tons to Germany.
   25 out of 100 tons to England.
7. Auto tires—20 out of 100 to Philippines.
   12 out of 100 to Japan.

The chief Exports from San Francisco were as follows: (By weight.)

1. Bulk Oil—19 out of 100 bbl. to Australia.
   16 out of 100 bbl. to Japan.
   15 out of 100 bbl. to Hawaii.
2. Barley—90 out of 100 tons to England.
3. Fruit—43 out of 100 tons to Europe.
4. Lumber—30 out of 100 tons to Australia.
   18 out of 100 tons to South America.
5. Asphalt—30 out of every 100 tons to Europe.
   20 out of every 100 tons to East Indies.
6. Rice—36 out of 100 tons to Hawaii.
   26 out of 100 tons to Japan.

If we speak in terms of money we find that the value of fruit is more than 35 cents out of every dollar received at San Francisco for everything exported.

England, Japan and Canada are the chief buyers of California products although nearly every country in the world gets something from us. Our state is one of the world's largest fruit growing regions and her oranges and lemons are in great demand. Some of our minerals, like borax and asphalt, are also shipped to many parts of Europe.



1. The harbor at Crescent City; 2. Humboldt Bay; 3. Monterey Bay; 4. Port San Luis (Obispo); 5. Santa Barbara; 6. San Diego Bay.

There are 25 separate harbors in California, 15 of which are part of San Francisco Bay. In good years the total value of shipping that entered and left these ports amounted to 3 and one-third billion dollars.

The fifteen ports in San Francisco Bay handled a tonnage of thirty-five million tons in 1931.

Los Angeles led in total tonnage in 1931 with over twenty-three million tons most of which was oil. San Francisco was second with nearly 11 million tons. Carquinez Strait in San Francisco Bay stood third with seven million tons, most of this tonnage being shipped locally to other points in the harbor.

In foreign shipments Los Angeles was first in tonnage and San Francisco first in values. Richmond was third in tonnage with Long Beach fourth. Oakland placed third in value with Richmond fourth. Port San Luis was the fourth port in tonnage shipments to foreign countries, oil being the principal product. Shipments from Eureka and Crescent City were mostly lumber. Monterey Harbor ships out crude oil and canned fish and receives a considerable quantity of fuel oil.

San Diego usually places fourth in the total value of shipping. Mendocino and Casper Landing handle lumber cargoes. The map on page 56 gives another view of the harbors.

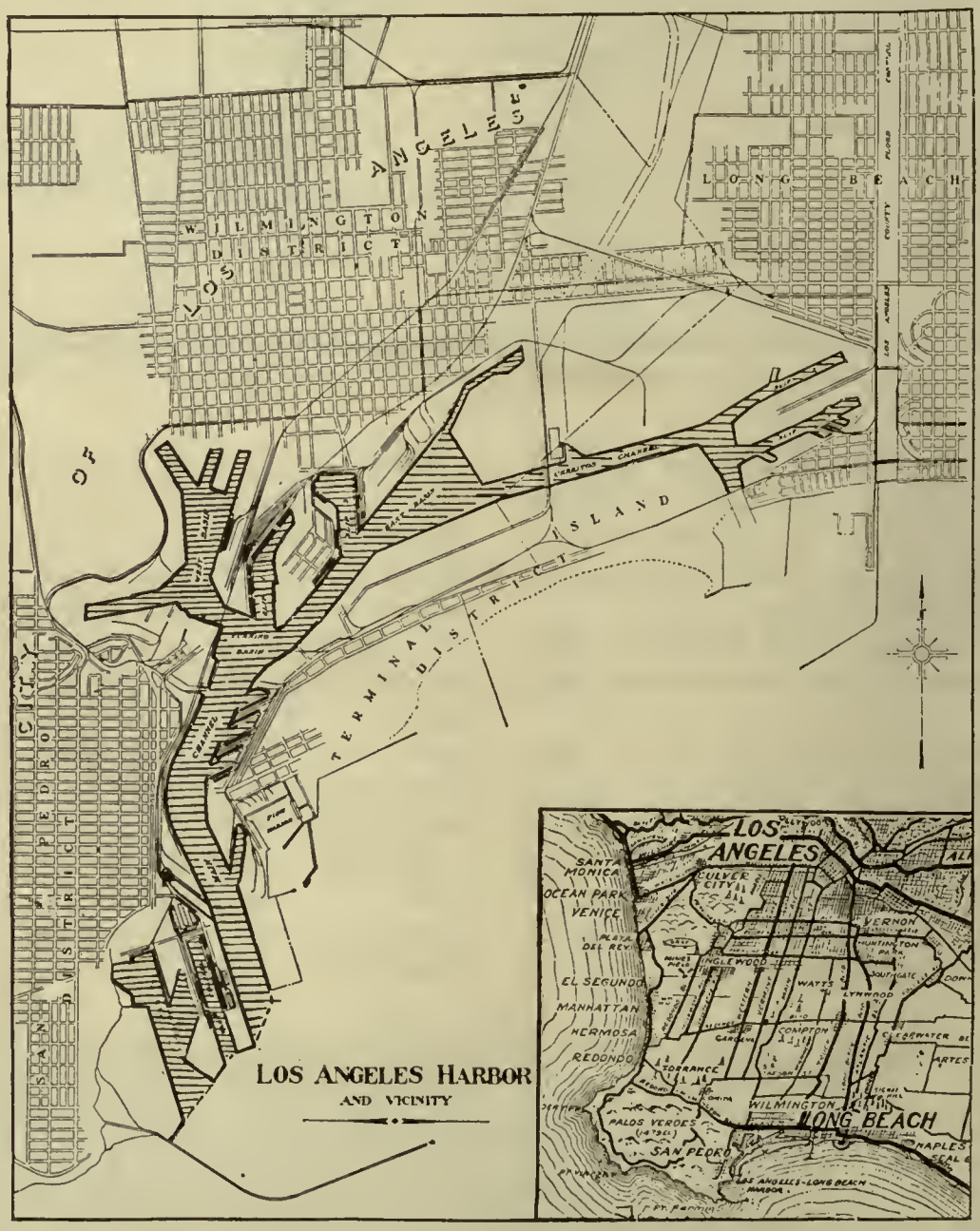
A Giant Ship Docks at San Francisco

Some years ago the city of Los Angeles decided that it needed an ocean port where its goods could be received and shipped. The manufacturing portion of the city was 15 to 20 miles from the ocean. A piece of land was selected which bordered the water next to Long Beach. It included the cities of San Pedro and Wilmington. A thin strip of land connecting Los Angeles and these cities was also added to the city.

A swampy, muddy lowland was then turned into one of the greatest harbors in the world. Neither Los Angeles nor Long Beach Harbors are what we would call natural harbors—they were both built at great cost and have greatly added to the growth of both cities.

Shipments of borax, in a recent year amounted to 80 thousand tons. The world's largest refinery is located at the harbor. California produces 9/10 of the world's supply. It is used for enameling, making glass, paper, tanning leather and for household use.

The map on this page and the photograph on the next show us Los Angeles and Long Beach Harbors. It is interesting to see if you can compare the same places on the picture and map. Note that they are not exactly the same because they were made at different times.



Three-quarters of a billion feet of lumber were handled by the harbor in 1930.

Nearly 2½ million boxes of citrus fruits move through the harbor in good years, about half of this total goes to Europe.

This is the story of the Los Angeles Harbor pictured below. The ships which carry Southern California products to distant lands come back loaded with raw materials from the countries which they touch. The Pacific has been turned into a series of great highways reaching to all parts of the globe.

In 1916 the Harbor handled about 2 million tons of shipping. In 1932 the total was over 20 million tons.

protects the boats in the harbor from rough water in stormy weather. Just back of this breakwater you will see part of our battle fleet. Sometime you may have an opportunity to visit some of these huge vessels of the United States navy.

The Atlantic Fleet visited California in 1932 and together with the Pacific Fleet engaged in battle practice between California and the Hawaiian Islands.

Airview of Los Angeles Harbor—Warships in Foreground

More than 6 thousand vessels arrived the same year. They flew the flags of 15 foreign countries.

Some 150 steamship lines make Los Angeles Harbor a port of call.

Los Angeles Harbor is one of the most important ports in the world for the shipment of petrolem products. Large quantities of gasoline and kerosene are shipped to the Orient and to the Far East.

The slender, white line that stretches across the front of the picture is a breakwater. It

Plans have been made to build another breakwater which will give the harbor even greater protection.

The Panama Canal has had the most important effect on Los Angeles Harbor. The business of the harbor increased more than 10 times since the canal was completed some 20 years ago. Nearly all of the vessels that make the journey from the east coast stop at Los Angeles. Ships that make the eastward passage also put in to the harbor for fuel, oil and provisions.

The San Francisco-Oakland Bay Bridge will connect the city of San Francisco with the mainland at Oakland. This bridge will be 200 feet above the water, some 8 miles in length and wide enough to allow 3 rows of automobiles to pass each way. It will cost about 60 million dollars and should be completed by 1937.

Here are a few facts about its size: 69 thousand miles of wire will be used in the 2 cables that hold it in place; each cable will be made up of 17 thousand wires; nearly 200 thousand tons of steel and wire to be painted with 200 thousand gallons of paint.

Yerba Buena Island in the center of the bridge will have a tunnel bored through it for the bridge roadway. This tunnel will be the largest of its kind in the world.

San Francisco Bay covers 450 square miles. It is about 13 miles wide and 48 miles in length. The shore line is 100 miles.

The entrance to San Francisco Bay is through the famous Golden Gate. This narrow opening is one mile wide and three miles long. It has a water depth of more than 300 feet which will permit the largest vessels afloat to pass into the bay.

Plans were completed in 1933 to build a bridge over Golden Gate. Its location is shown on the insert map. The main span between the two center pieces which are each 700 feet high is to be the largest yet built by man. The steel cables to hold the bridge will be 3 feet thick and will be made up of 27 thousand wires each. The bridge will connect the Redwood and Coast Highways.

San Francisco Bay is today considered one of the great natural harbors of the world. It compares with Constantinople, Rio de Janeiro or Naples.

The Port of San Francisco is operated by the state. It has 49 piers and terminals from 150 feet wide to 1300 feet in length. There are also 15 passenger and ferry-boat slips and 6 car ferry slips. The Port provides more than 17 miles of boat loading space. It is close to the business portion of the city.

San Francisco, Richmond and Oakland are shipping centers that carry on a world wide ocean commerce. Other large shipping points are along Carquinez Strait and around Suisun and San Pablo Bays. In 1930 these three points handled 15 million tons of freight. Many factories dot the shores of San Francisco Bay and its nearby waters. The cities of the peninsula south of San Francisco, are mostly residential. Two large universities are located at Palo Alto and Berkeley.

Courtesy Californians, Inc.

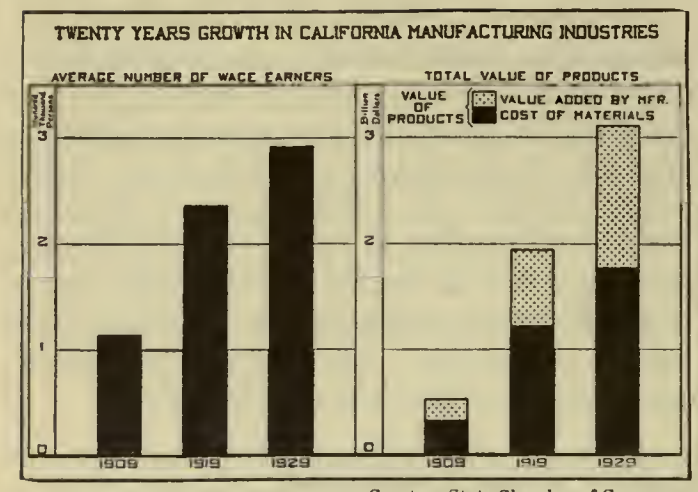
Airview of San Francisco Showing Portion of Harbor—Note Ferry Building in Foreground and Golden Gate in the Distance

Many large and prosperous cities are grouped around San Francisco Bay: San Francisco, Oakland, Berkeley, San Jose, Emeryville, Hayward, Alameda, Richmond, Santa Clara, San Rafael, San Mateo, Palo Alto, Redwood City, Piedmont, Pittsburg, Burlingame, Vallejo, San Leandro, Martinez, South San Francisco and Sausilito are some of the towns and cities in the Bay district.

The Santa Clara Valley below San Francisco is one of the best fruit producing districts in the state. At Salinas farther to the south rubber is being grown from a plant called quayule.

The world famous Monterey Peninsula lies 120 miles south of San Francisco. It is noted for its beautiful, rocky coast line. The city of Monterey was once the capital of California. Today it is interesting for its sardine canneries and its many reminders of early California life.

North of San Francisco, may be found many progressive and prosperous towns. San Rafael, Petaluma and Santa Rosa along the Redwood Highway are centers of a rich agricultural back country. Santa Rosa was the home of Luther Burbank. Just east of these cities lie, Vallejo, Sonoma and Napa.



Courtesy State Chamber of Commerce

Chart No. 1 *Chart No. 2*

To manufacture is to make, produce or construct, by hand or machinery, an article that can be used. The value of the articles produced, by California industries, are shown on Chart No. 2. The cost of all material used in manufacture is given by the solid black line. The dotted part is the value added by the work done. This includes the cost of labor, selling the finished article and the profit.

The value added by manufacture is really the important thing to consider here. (We have already studied about the value of the raw materials produced in the state.)

The manufacture of gasoline and other products from crude oil leads in "added value" industries.

Production of motion pictures is second and the canning of vegetables and fruit third. Foundry and machine shops are fourth.

Where we consider the total value of manufactured products (which includes the cost of materials), we find:

1. Food—Canning vegetables and fruit.
   —Meat packing.
   —Bread and baking.
   —Coffee spice products.
   —Butter.
2. Oil and gas.
3. Machinery—foundries and machines.
4. Forest products—lumber and timber.
5. Transportation equipment.
   —motor vehicles—ships, etc.

Chart No. 1 shows the growth in the number of wage earners in the state.

In 1929 there were over 300 thousand employed in some 12 thousand manufacturing concerns. Only 7 other states in the United States make a greater total value of manu-

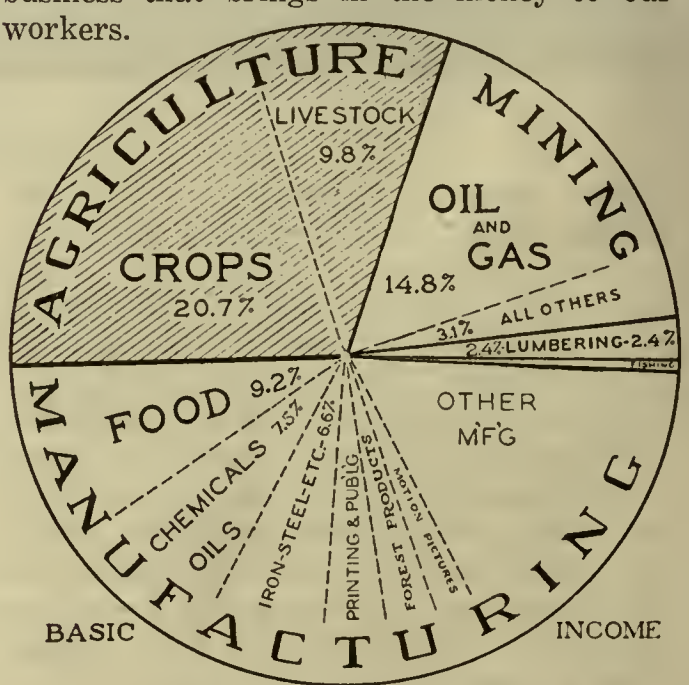
How Our People Are Employed

factured goods. In 1929 more than 3 billion dollars worth were produced. The rate of growth of California manufacturing has been nearly twice as great as the rest of the country.

The state turns out more than half of the output of the 11 western states.

Eight counties out of the 57 produce the greatest results. Los Angeles County leads with San Francisco, Alameda, Contra Costa, San Mateo, Santa Clara and Fresno in the order given. These counties produce $85 out of every $100 worth of manufactured goods made in the state.

The circle graph below shows the basic income of California. It tells us the kind of business that brings in the money to our workers.



Where Our Dollar Comes From

The automobile has changed the life of the people of California in more ways than one. Let us see, for example, how much of our money is spent each year on new cars and in keeping them repaired and in gas and oil.

Twenty-five cents out of every dollar that is paid out by the people of the state, in their every day buying, goes toward keeping their cars running. We spend more on automobiles than we do on food. Most of the money, of course, buys the car. Out of each dollar spent on automobiles about 30 cents is used for gas and oil.

Even in very bad times people keep their cars going. They seem willing to give up almost anything else as long as they do not have to part with their automobiles.

The circle graph, on this page, shows us how our every day dollar is spent. We are speaking of the money that is spent in stores. It does not mean money that is paid out for homes or for running the business of the city, state or government (taxes).

You will see that food gets the second largest slice out of our dollar. About 20 cents is spent in grocery stores, meat markets and for milk, eggs, bakery goods and candy.

Department, dry goods and general stores, like the 5 and 10 cent ones, get the third bite of our dollar.

Clothing stores such as suits and dresses, hats, shoes and other things that we wear are next.

Then comes the lumber and building group which includes hardware, electrical and plumbing stores. Finally restaurants, eating places and furniture stores.

More than a hundred different kinds of stores are placed together in the last part of the dollar. Drug stores lead in this group followed by feed stores for farmers and country general stores.

We have talked a great deal about this money spent on retail buying because it has so much to do with our life and happiness. The money that is spent in this way has come as a reward for the work done and the things that are made.

In California it amounts to a very large sum each year. In the year of which we have been speaking, 1930, the total was 3¼ billion dollars. It was spent in more than 86 thousand stores.

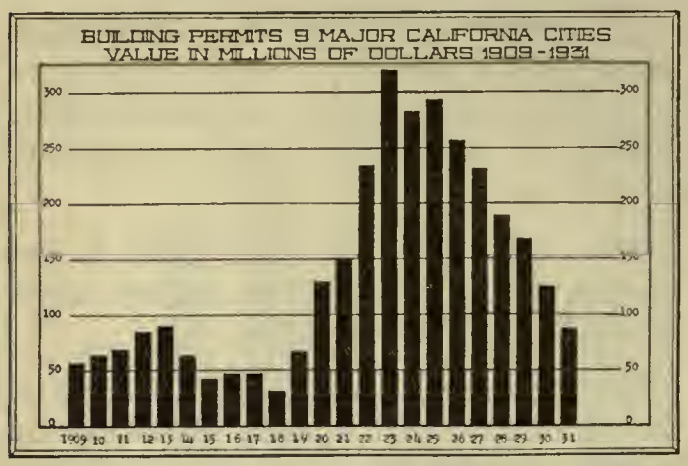
There are only three other states in the country that have more stores and two others in which more money is spent.

The large number of visitors, or tourists as they are called, that come to see and enjoy California each year spend a portion of the total. Most of them come on account of our climate and to see the many interesting sights. (You will remember that the map on page 33 showed us the chief places.) Some people tell us that these tourists spend hundreds of millions each year. Whatever the amount is it has helped place the state in the lead for the dollars per person spent in stores. This is figured by dividing the number of people in the state into the total amount spent. As the tourists do not usually stay long they are not figured as living here. The money they spend is counted but they are not.

The larger cities of California, of course, receive the most of this money. Los Angeles, San Francisco and Oakland receive half of the total.

The cities of Santa Rosa, Fresno and Santa Barbara lead in the dollars per person spent in stores.

Where Our Dollar Is Spent



Courtesy State Chamber of Commerce

Building

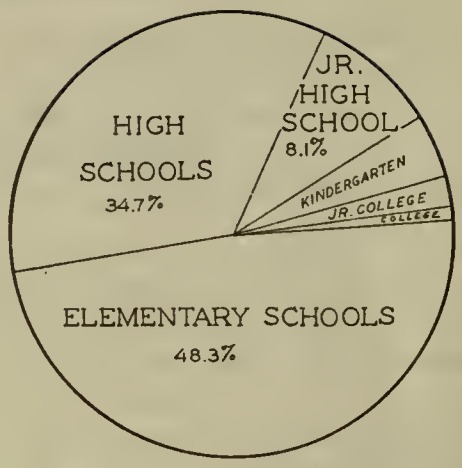
The chart above shows the amount of building that took place in the state, during the past 22 years. It gives the permits granted in the 9 largest cities. The big increase took place in 1922 and 1923.

Since 1923 there seems to have been a gradual but steady decrease. It is likely that the gain between 1918 and 1923 was too great. We do know that it grew 6 times as fast as the population during the same years.

This overgrowth often occurs in newer parts of a country like California. Every owner of a piece of land, in the large cities, wants to get some income (money return) from his property. Great tracts of land are divided and sold to thousands of small home owners. Many of the buyers build houses. Many of them are builders and build places for resale. It is an industry that has no one person in control. The exact number of people who will need houses are not known. Before anyone realizes it there is entirely too much building. Prices come down. There is no need for more houses as many are already for sale.

It must be remembered, in looking at the chart above, that building permits are only permissions to build. Sometimes there is a change in plans and nothing further is done about the matter. It is, however, the best record that can be secured for comparing one year with the next.

Most of the homes in the larger cities are built with wood frame work, covered with stucco. There are of course many that are made of brick and stone. Tile roofs are common.



Nearly Half Our Public School Pupils Are in the Elementary Grades

Schools

The first free public school in the state was opened in San Francisco, on April 18, 1850. Six years later the first high school was started. Kindergartens were established in 1878. The State University of California is one of the largest places of learning in the world. It has more than 25 thousand students in its various locations. These consist of the following: the University of California at Berkeley, the University of California at Los Angeles, the law, medical, dental and pharmacy colleges at San Francisco, the College of Agriculture at Davis, and several experiment stations and observatories in other parts of the state.

In addition to the above there are 7 teachers colleges with more than 12 thousand students. There are also 4 special state schools for technical and agricultural students, for the deaf and blind, and a Nautical School for training officers for the American Merchant Marine.

The chart shows how the pupils were distributed in 1930. Nearly half of them are in the elementary grades.

There are over 4500 schools and more than 45 thousand teachers.

California is nationally known as one of the leaders in its school activities. The buildings and equipment are modern, and the system most complete.

Stanford University at Palo Alto and the University of Southern California at Los Angeles are the leading private universities. They rank with the best institutions of learning in the world. The buildings and grounds of Stanford are wonderful to see. A visit to either of these universities is an education.

A SAN FRANCISCO OFFICE BUILDING

SAN FRANCISCO FROM THE AIR

THE OAKLAND CITY HALL

A BEAUTIFUL LOS ANGELES CHURCH

LOS ANGELES CITY HALL

SAN FRANCISCO SKYSCRAPERS

AIR VIEW OF LOS ANGELES BUSINESS SECTION

WILSHIRE BOULEVARD IN LOS ANGELES

There Are Many Beautiful Buildings in California.

The Olympic Stadium at Los Angeles

The 10th Olympiad

The principal California sports event in late years was the 10th Olympiad, held at Los Angeles from July 30 to August 14, 1932. It was the first time in history that the Olympic Games had been held by any country bordering the Pacific Ocean.

The Olympic Games are important because for hundreds of years they have been a means of bringing together the people of many nations in friendly competition. The first games were celebrated in Greece more than 2700 years ago. The modern Olympics, which are held every four years, were started in 1896 through the efforts of Baron Pierre De Coubertin.

The 10th Olympiad was very successful. More Olympic and world's sport records were equalled or beaten than in any of the past Games. The number of people who attended the different events also established a record. The photograph shows us an air view of the stadium with about 100 thousand people present.

Forty nations sent athletes to the 10th Olympiad. The Olympic Village, which was built for their use, proved the most unusual feature of the games. All those that played in the games lived side by side in small houses of their own. They came from the four corners of the world and lived in peace and friendliness during the competition. The result was very satisfactory. It gave the different races a better understanding of each other, which was the thought in mind when the games were started.

Orange Groves in the San Gabriel Valley

Copyright, Spence

Los Angeles

The city of Los Angeles has an area of 411 square miles. The shaded portion, on the map, shows the city boundaries. San Pedro and Wilmington at the south end are part of Los Angeles. They were added so that the harbor might be made a part of the city. The outer harbor borders San Pedro and the inner harbor lies in Wilmington.

Some of the largest cities in the state are in the Los Angeles area. Long Beach, Pasadena, Glendale, Santa Monica and Huntington Park each have more than 25 thousand population.

The city itself has grown so fast that it has reached the borders of some of these towns. It is difficult at times to tell where one begins and the other ends.

LOS ANGELES AND VICINITY

Los Angeles was first seen by Governor Portola on August 2nd, 1769. It was a small Indian village named Yang-na.

Twelve years later the Governor of California, Felipe de Neve, christened it "Pueblo of our Lady Queen of the Angels."

King Carlos III of Spain gave the order for its founding. It is one of the few cities of the country that was planned in advance.

Los Angeles had a population of 102,479 in 1900 and at the last census (1930) it had grown to 1,238,038 inhabitants. It ranks as the largest city west of Chicago and is 5th in the national standing. The greater Los Angeles area has more than 2 million people.

The buying power of the people of Los Angeles amounts to over a billion dollars a year in good years.

Los Angeles County has over 4000 manufacturing plants, pays out 150 million dollars in wages and manufactures products worth over a billion dollars.

The events that have brought about the rapid progress of Los Angeles are briefly as follows: discovery of huge quantities of oil in Los Angeles, the motion picture business, the citrus industry, a rich back country and a very considerable tourist business.

With the increase in population have come many branch factories, built by large eastern firms to take care of their West Coast business.

A large rubber industry has been built up in the last few years. Automobiles, textiles, iron and steel, and oil well machinery are manufactured. Hundreds of other products are produced. The motion picture industry which centers in Hollywood, a part of Los Angeles, is very important. It pays its workers millions of dollars a month. Many people visit Los Angeles to see this interesting business.

San Francisco

San Francisco Bay was discovered in 1769 by Portola. Don Juan Manuel Ayala, in 1775, was the first to cast anchor in its waters.

Since it was named in 1847, San Francisco has grown from a village of a few thousand people to a city with 634,394 inhabitants in 1930. Its area is 42.19 sq. miles, altitude from 0 to 965 feet.

Within the San Francisco Bay area are 1,653,392 people who represent a yearly buying power of nearly a billion dollars.

San Francisco has over 2500 industrial plants with wages of 66 million dollars yearly and manufactured products of $475,618,387.

The city in 1931 had 108 thousand water consumers, 185 thousand gas users, and 202 thousand electricity consumers. Telephones installed 261 thousand.

There are 48 parks with 3000 acres of area, 1328 restaurants and 250 churches.

San Francisco City and County have a

Airview of Oakland—Looking Across Lake Merritt

combined form of government. There are 15 supervisors in the legislative branch and a mayor as chief administrative officer.

In 1929 the postal receipts were over 9 million dollars, bank clearings nearly 11 billion and bank deposits nearly two billion dollars.

Building permits averaged 32 million dollars for 5 years. Assessed valuation of all property was over 1½ billion dollars.

San Francisco ranks next to New York in stock exchange transactions. It is the home of one of the three United States Mints.

The city is noted for its fine restaurants, its Chinatown (the largest in America), Fisherman's Wharf, shopping district, Exposition Auditorium, Mission Dolores, Palace of the Legion of Honor and for Golden Gate Park.

Oakland

Oakland, California's third largest city, lies on the east side of San Francisco Bay. It has a population of nearly 300 thousand but is in the center of a group of 9 other cities with nearly double this population. Oakland was incorporated as a city in 1854.

Four transcontinental railroads serve the city. Its municipal flying field has the highest possible government rating. Nearby is a giant airdrome and Army air base which makes Oakland a national figure in aviation. The map on page 66 shows the location of Oakland on San Francisco Bay. It enjoys a rapidly growing sea commerce. Oakland Harbor is building rapidly. The fleet of old sailing vessels in the estuary is one of the interesting sights.

Other attractions include Lake Merritt, a salt water lake lying in the center of the city; Skyline Boulevard, Mills College, Joaquin Miller's home, and the 2 million dollar city hall.

San Diego

San Diego is the fourth largest city of California It was first founded by Cabrillo, on Sept. 28th, 1542, and was settled by Serra in 1769. It is the oldest city in California although its real growth did not start until about 1867. San Diego is one of our chief fishing ports. The city is a combination of hustling business and prosperous homes. A great many tourists visit San Diego. Coronado Beach, which lies just west of San Diego is a noted beach resort.

Balboa Park, near the center of San Diego is the third largest city park in America. It contains 1400 acres of playgrounds, flower garden and lovely trees and shrubs. Balboa Park also has a golf links, zoo, several museums, an art gallery and several beautiful buildings that were built for the Panama Pacific Exposition in 1915.

Other places to see in San Diego are Ramona's Marriage Place, Old Town and Point Loma where the government has built a large military reservation. Several world famous flying fields are in San Diego. It is a great flying center.

Much air activity centers in San Diego. Several large airports are in and around the city.

Airview of San Diego Across the Bay

Long Beach

The name Long Beach comes from the 7 miles of perfect beach that borders the city.

Long Beach in 1930 was the 5th city in California. It is one of the fastest growing places in the state. The discovery of oil in and around Long Beach had much to do with its growth. Many large factories are located in the Long Beach area. Its harbor, which joins Los Angeles harbor, is an important shipping point. It cost over 5 million dollars to construct. More than 50 million dollars worth of goods have been shipped from Long Beach Harbor in a single year.

Signal Hill in Long Beach has nearly a thousand oil wells and is the largest regularly producing field in the county.

A circular pier built into the ocean near the center of the beach, upon which a large auditorium has been built, is one of the features of Long Beach.

Sacramento

The capital of California is a city of nearly 100 thousand people. It is noted for its beautiful, tree lined streets and its many fine homes and public buildings. The capitol building itself is one of the oldest in the country. Our governor, legislators and other officials who are elected by the people to govern the state meet in the capitol.

Sacramento has many great fruit and vegetable canneries and other manufacturing plants.

Sutter's Fort, founded in 1839 is a very interesting place to visit in Sacramento. It is a state museum and contains many reminders of the early days of California history. The Crocker Art Gallery is also well worth seeing.

Sacramento is the center of a great farming country. The boat trip up the Sacramento River is very enjoyable.

There were five other cities in California with a population of 50 thousand or over in 1930—Berkeley, Pasadena, Glendale, San Jose and Fresno. (See page 36.)

Berkeley is noted as the home of the University of California. It has many fine homes and numerous factories. (See page 66.)

Pasadena is located at the base of the San Gabriel Mountains north of Los Angeles. (See page 73.) It is known for its beautiful houses and public buildings. The world famous Huntington Library is near the southern limit of the city in South Pasadena. The annual New Year's Football game and Tournament of Roses are held in Pasadena.

Glendale is a thriving community of some 65 thousand inhabitants. It has had an extremely rapid growth. Many large industries have located in Glendale. (See page 73.)

San Jose lies in the fertile Santa Clara Valley. It is the manufacturing and shipping headquarters for one of the richest fruit and vegetable regions in California.

Fresno is near the exact geographical center of the state. Grapes, figs, peaches and cotton are a few of the farm products that make Fresno one of our most important cities.

In 1930 there were six cities in California with 30,000 to 50,000 population: Stockton, San Bernardino, Santa Monica, Alameda, Santa Barbara and Santa Ana.

Stockton with nearly 50,000 people is located on the San Joaquin River, in the Great Valley, east of San Francisco Bay. It is the center of a great field crop region. Many manufacturing plants are in or near the city.

San Bernardino is in the citrus growing region of California and has many industries devoted to the packing and processing of this type of fruit. Several transcontinental railroads have made the city a railroad center.

Santa Monica borders the Pacific Ocean some 18 miles west of Los Angeles. The new yacht harbor, started in 1932, will greatly increase boating activity in the vicinity. Santa Monica is popular as a winter resort.

Alameda is directly east of San Francisco on San Francisco Bay. (See page 66.) It is a city of beautiful homes and has many industries.

Santa Barbara is a world renowned resort city located on the ocean 98 miles from Los Angeles. The protecting band of mountains which surround the city give it a very temperate climate. Santa Barbara has many large hotels. Montecito is noted for its fine estates.

Santa Ana was the 17th city of the state in 1930. The heaviest walnut plantings in California are near Santa Ana. The city is the center of a rich agricultural community.

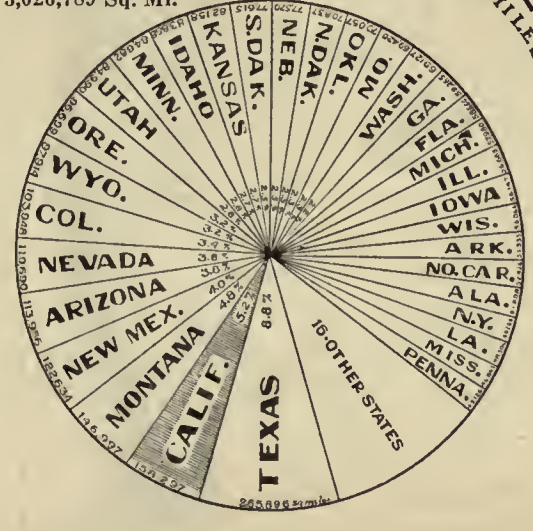
Compared with other states:

California is second in area, and sixth in population.
It is first in cash return to the farmers and 3rd in minerals.
California and Massachusetts lead in fishing.
California raises 44% of the fruit, and 36% of the vegetables of the country.
California and New York lead in aviation.
California is first in foreign exports.
California is the seventh state in number of foreign-born white population.
The State leads in foreigners from Denmark, Mexico, Australia, Switzerland.
California is the 2nd state in the number of English, French, Spanish and Portugese.
Oklahoma and New Mexico are the only states with a greater Indian population.
Net individual income is greater in California than in the combined 8 South Atlantic States.
California has more telephones per 1000 population than any other state.
New York is the only state that produces more electric power than California.
In 1928 California passed New York in the amount of developed water power.
Washington is the only state with a greater potential water power available.
California stood second to New York in 1931 auto registrations.
California leads all the states in money received from the gasoline tax.
California is the fifth state in number of electric railways.
California leads in acres under irrigation with about one-third the country's total.
The average value of farm land and buildings is highest in California.
California farmers had the greatest income from the farms in 1930.
California farmers receive nearly six times as much for their farm crops as Iowa farmers.
Iowa and Missouri are the only states producing more eggs than California.
Six other states had more chickens on hand on April 1, 1930.
Three other states produced more wool in 1931.
Government forest acreage is greater in California than in any other state.
In 1931 New York and Wisconsin led California in hay produced.
California led the country in dry bean production in 1931.
Three other states led us in lumber products in 1930.
California leads in production of borax, chromite, diatomite and gold.
It is first in magnesite, marl, mercury, natural gasoline, potassium, silica, and sodium.

The first overland journey from the Mississippi River to the Pacific Ocean started on May 14, 1804. On that date Capt. Meriwether Lewis and William Clark at the head of a party of 27 men, commenced their history making adventure. They started in 3 boats from the mouth of the Missouri River opposite St. Louis, Missouri. The map shows the route of this successful expedition.

The Santa Fe Trail stretched for nearly a thousand miles from Franklin, Missouri to Santa Fe, New Mexico. Such early pioneers as Becknell, Kit Carson, Wootton, Fremont, Kearney, Buffalo Bill, Crook, Sherman, Sheridan and Greely passed over this historic highway. The Oregon Trail provided another route to the northwest. It added another step in the conquest of the West.

AREAS
3,026,789 Sq. Mi.



1930 POPULATION

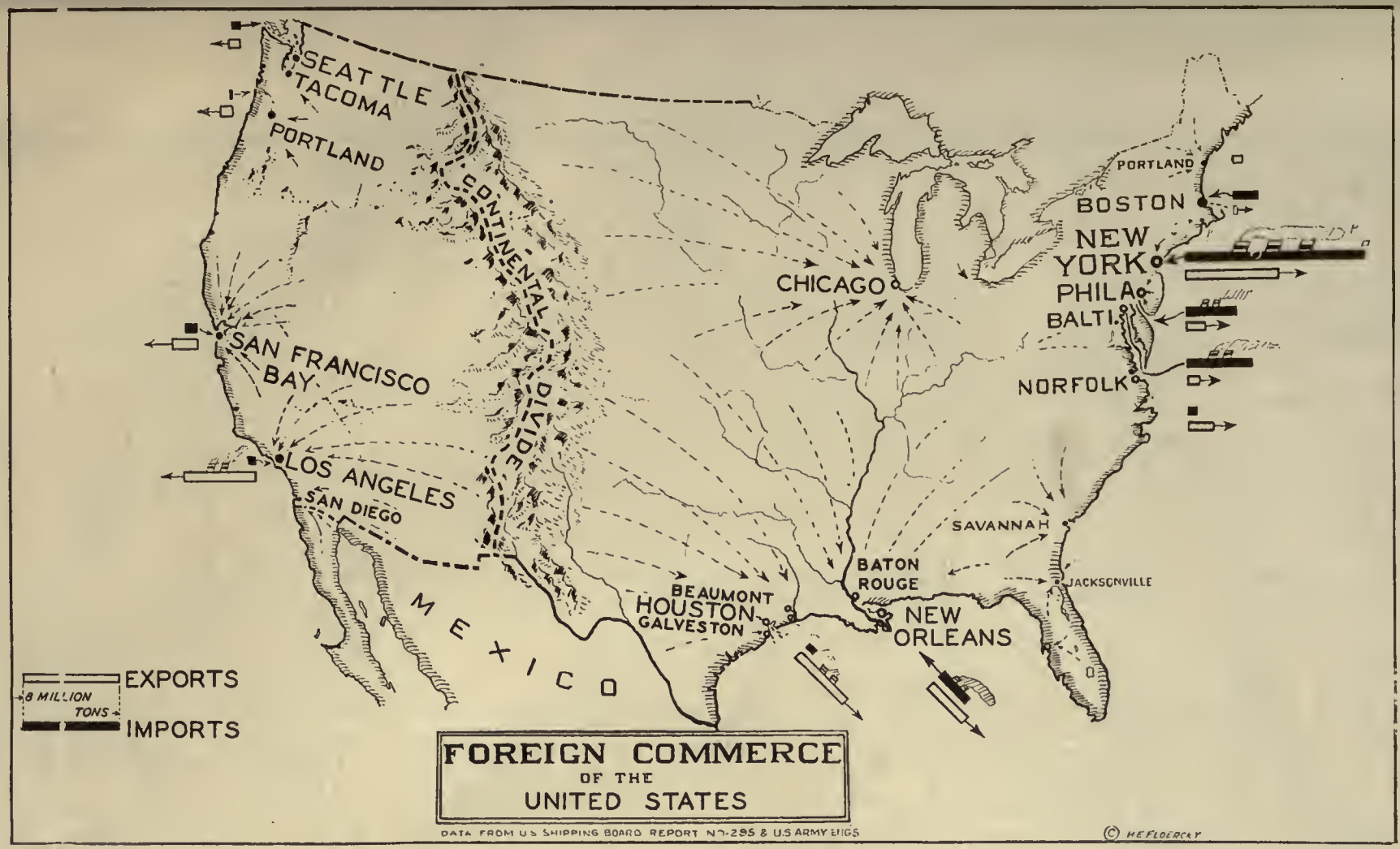
State Groups, Areas and Population

California is one of the Pacific group of states. It is next to Texas in size. Compared with the area of other countries California is larger than either Japan or Norway. It is about the same size as England, Ireland, Denmark and Belgium combined.

The latitude which forms the boundary between California and Oregon also separates New York and Pennsylvania, passing near Chicago and Boston.

A line east from San Diego would go within a short distance of Dallas, Texas and Charleston, South Carolina. Los Angeles and Atlanta are about in line.

Note how the mountains of California affect the country just east of the state. The Sierras catch most of the rain from the ocean and as a result the Great Basin is very dry. The Continental Divide is an imaginary line running along the highest ridge of the Rocky Mountains. It divides the rivers of the United States.



All Ocean Commerce

New York Harbor handles one out of every 4 tons of freight shipped in and out of the ports of the United States. San Francisco Bay, which includes the ports of San Francisco, Oakland, Richmond and others, stands second to New York in the money value of goods received and shipped. Los Angeles recently led the entire country in total outgoing ocean shipments.

Foreign Commerce

With respect to the foreign commerce of the country note that the map above tells us that California ships out more goods than any other state. The demand for our oil products makes this possible. The dotted lines on the map shows the movement of goods to each harbor. Most of the things produced west of the Continental Divide are shipped from the Pacific Coast.

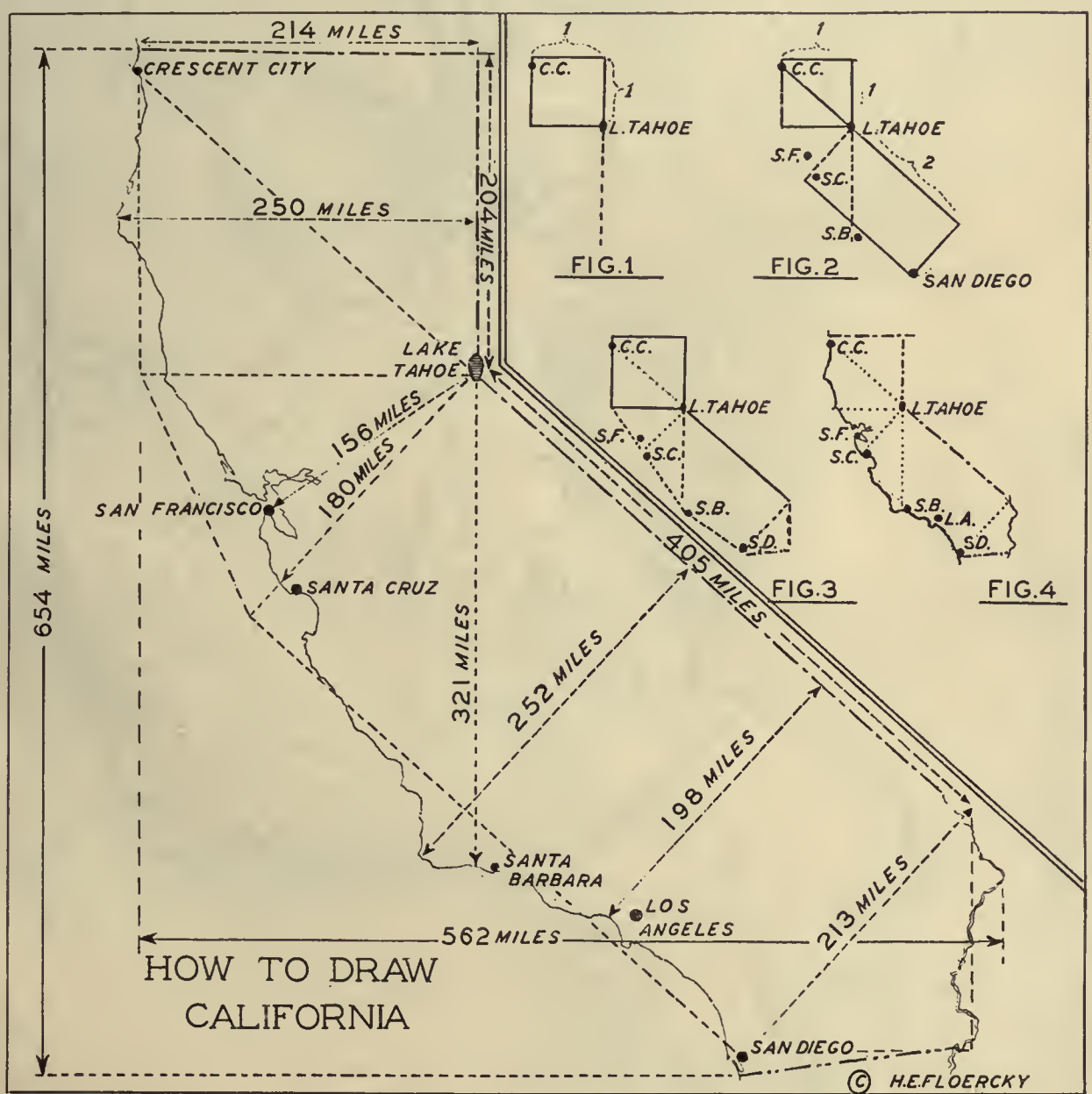
Scales
Miles
Kilometers
ATLANTIC OCEAN
PACIFIC OCEAN
GULF OF CALIFORNIA
LOWER CALIFORNIA
MEXICO
CANADA
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
NEW YORK
PENNSYLVANIA
OHIO
INDIANA
ILLINOIS
MISSOURI
KANSAS
NEBRASKA
DAKOTA
COLORADO
NEW MEXICO
ARIZONA
UTAH
NEVADA
OREGON
WASHINGTON
IDAHO
MONTANA
WYOMING
ARKANSAS
LOUISIANA
TEXAS
BAHAMA ISLANDS

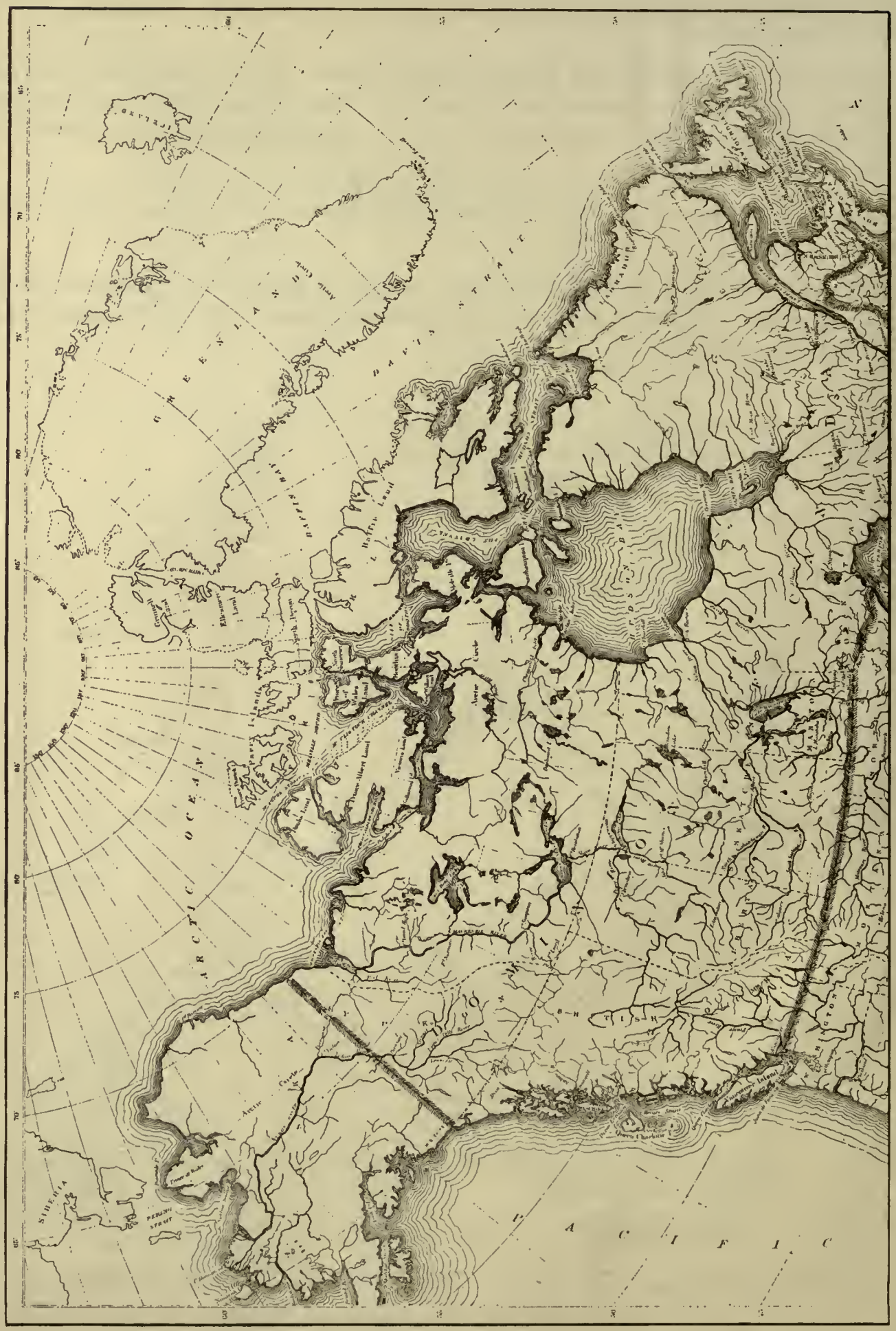
Figure 1—Draw a square at the upper, left hand part of your paper. Mark Lake Tahoe and Crescent City as shown.

Figure 2—Draw a diagonal line through these two points. Make it as long as the two sides of the square and complete the rectangle. We now have three squares all the same size. San Diego is in the lower corner. Santa Barbara is just beyond our outside line and Santa Cruz a little closer to Lake Tahoe.

Figure 3—Draw a line from Santa Barbara through Santa Cruz to connect with our upper square.

Figure 4—Complete the outline of the state. North of Santa Cruz keep inside the line drawn in Figure 3. Keep well outside of this line south of Santa Cruz. Add a small triangle to the right of San Diego.




GREENLAND
ICELAND
DAVIS STRAIT
BAFFIN BAY
HUDSON BAY
ARCTIC OCEAN
PACIFIC
SIBERIA
Behring Strait
Victoria Island
Banks Island
Melville Island
Prince of Wales Land
Boothia Land
North Devon
Ellesmere Land
Grinnell Land
Parry Islands
Queen Charlotte Islands
Vancouver Island

NORTH AMERICA
SOUTH AMERICA
GULF OF MEXICO
CARIBBEAN SEA
BAHAMA ISLANDS
CUBA
JAMAICA
HAITI
SAN DOMINGO
NICARAGUA
COSTA RICA
PANAMA
COLOMBIA
VENEZUELA
GUIANA
BRAZIL
PERU
BOLIVIA
PARAGUAY
CHILE
ARGENTINA
URUGUAY
ECUADOR
Chicago
New York
Boston
Washington
Los Angeles
San Francisco
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Panama
Havana
Kingston
Caracas
Lima
La Paz
Asuncion
Buenos Aires
Santiago
Montevideo
Quito
Bogota
Rio de Janeiro
Sao Paulo
Manaus
Belem
Salvador
Recife
Fortaleza
Brasilia
Pacific Ocean
Atlantic Ocean
Bering Sea
Aleutian Islands
Hawaiian Islands
Alaska
Canada
Mexico
United States
Lower California
Yucatan
Florida
Texas
California
Nevada
Arizona
New Mexico
Colorado
Utah
Wyoming
Montana
Idaho
Oregon
Washington
Nebraska
Kansas
Oklahoma
Missouri
Illinois
Indiana
Ohio
Michigan
Wisconsin
Minnesota
Iowa
Dakota
Tropic of Cancer
Equator
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